AM-FM STEREO RECEIVER

KR-V45

SERVICE MANUAL

KENWOOD

KENWOOD CORPORATION

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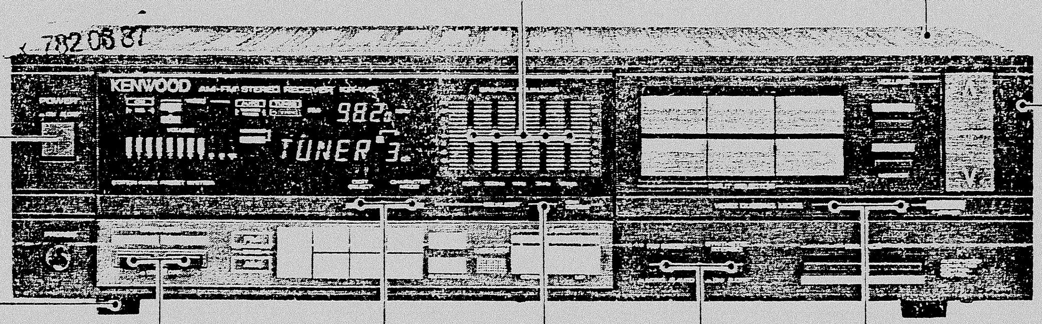

782 06 87
KENWOOD
AM-FM STEREO RECEIVER KR-V45
98.2
TUNER 3

Potentiometer
(R29-5010-05)

Metallic cabinet
(A01-1488-01)

Panel
(A20-4845-02)

Knob ass'y (Button)
(K29-2001-04)

Foot
(J02-0170-04)

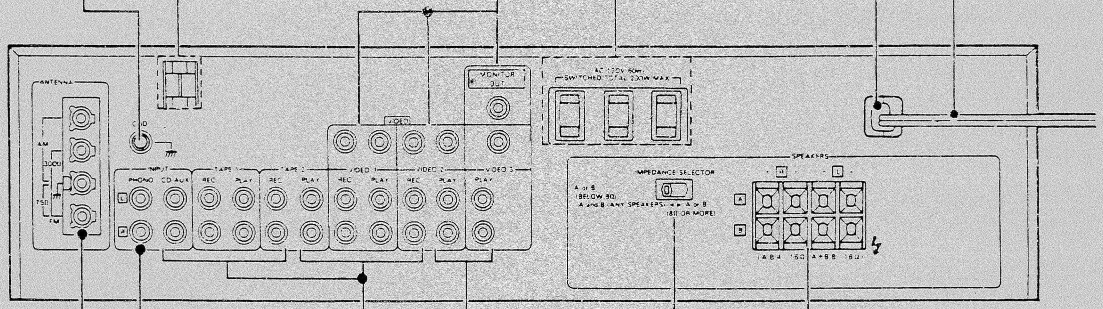
Knob (Button)
(K27-1264-04) × 2

Knob (Button)
(K29-2425-04) × 2

Knob (Button)
(K29-2422-04)

Knob (Button)
(K27-1647-04) × 2

Knob (Button)
(K29-2422-04) × 2


ANTENNA
AM
300Ω
75Ω
FM
GND
INPUT
PHONO
CD AUX
TAPE 1
TAPE 2
REC
PLAY
VIDEO
VIDEO 1
VIDEO 2
VIDEO 3
MONITOR OUT
AC 220V 50Hz
SWITCHED TOTAL 200W MAX
IMPEDANCE SELECTOR
SPEAKERS

Binding post (GND)
(N08-0128-35)

Antenna holder
(J19-0626-12)

Phono jack (2P)
(E13-0227-05) × 3

AC outlet
(E03-0086-05)

Power cord bushing
(J42-0083-05)

AC power cord*
(E30-)

Phono jack
(E13-0229-05)

Phono jack (8P)
(E13-0814-05) × 2

Slide switch
(S31-2113-05)

Screw terminal board*
(E20-)

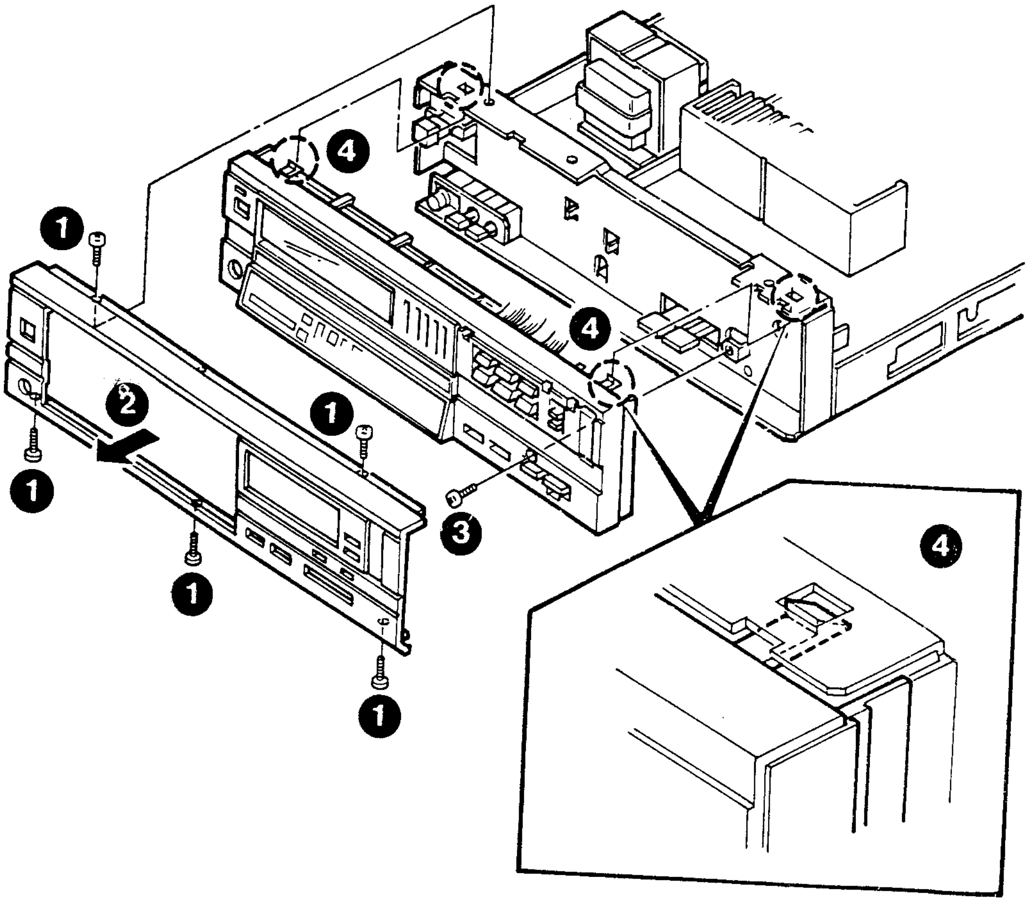
Phono jack (4P)
(E13-0497-05)

Lock terminal board
(E20-0823-05)

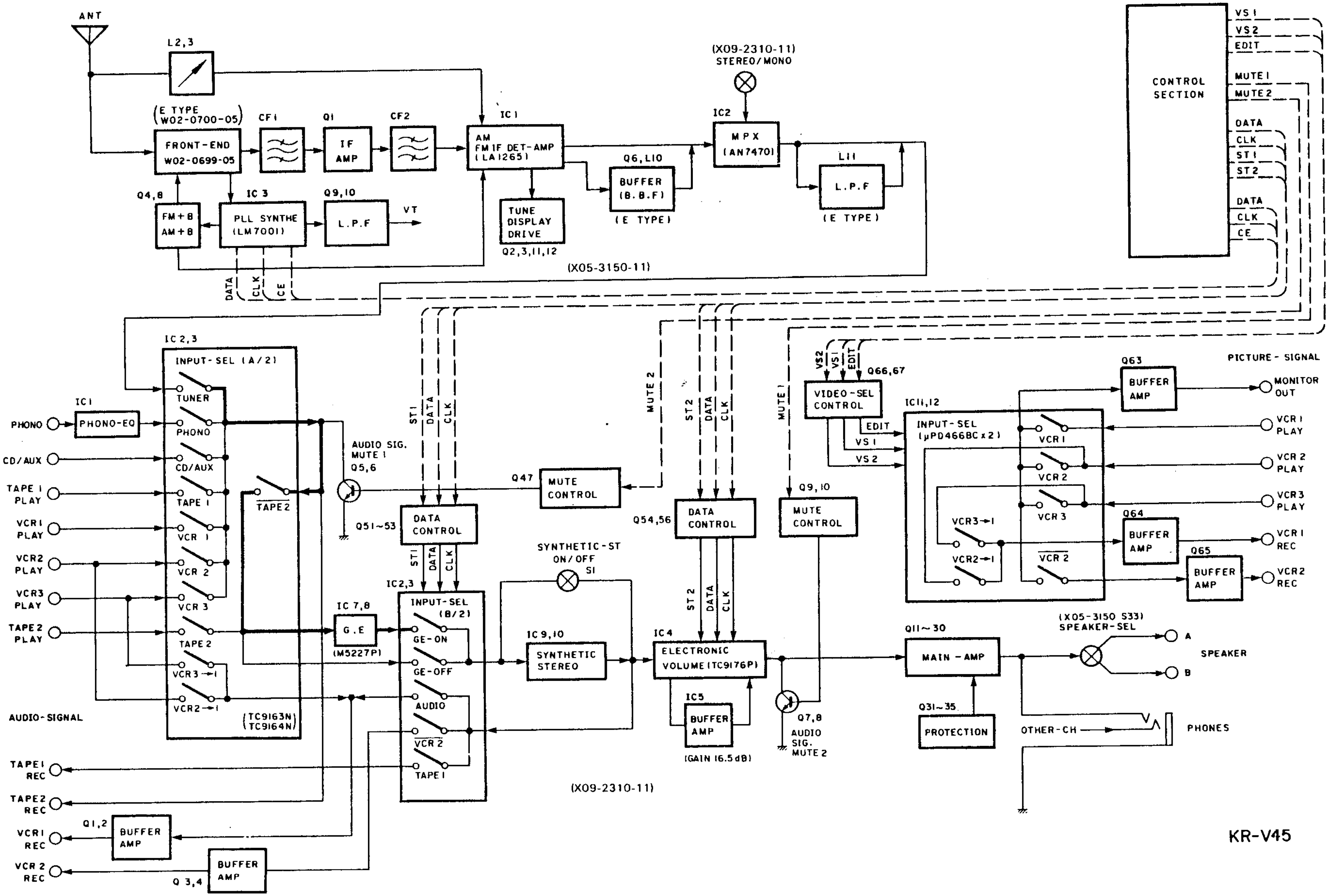
***Refer to parts list on page 14.**

DISASSEMBLY FOR REPAIR

1 Remove 6 screws retaining the front pannel ❶
2 Pull the front pannel toward to arrow direction ❷
3 Remove screw retaing the sub-pannel ❸
4 Remove the sub-pannel from hooks carefully ❹



BLOCK DIAGRAM


ANT
L2,3
(E TYPE W02-0700-05)
FRONT-END W02-0699-05
CF1
Q1
IF AMP
CF2
IC1
AM FM IF DET-AMP (LA1265)
(X09-2310-11) STEREO/MONO
IC2
MPX (AN7470)
Q6,L10
BUFFER (B.B.F)
(E TYPE)
L11
L.P.F
(E TYPE)
TUNE DISPLAY DRIVE
Q2,3,11,12
Q4,8
FM+B AM+B
IC3
PLL SYNTHE (LM7001)
Q9,10
L.P.F
VT
DATA
CLK
CE
(X05-3150-11)
CONTROL SECTION
VS1
VS2
EDIT
MUTE1
MUTE2
DATA
CLK
ST1
ST2
DATA
CLK
CE
IC2,3
INPUT-SEL (A/2)
TUNER
PHONO
CD/AUX
TAPE 1
VCR 1
VCR 2
VCR 3
TAPE 2
VCR3→1
VCR2→1
(TC9163N TC9164N)
IC1
PHONO-EQ
PHONO
CD/AUX
TAPE 1 PLAY
VCR1 PLAY
VCR2 PLAY
VCR3 PLAY
TAPE2 PLAY
AUDIO-SIGNAL
TAPE2
AUDIO SIG. MUTE 1
Q5,6
Q47
MUTE CONTROL
MUTE 2
ST1
DATA
CLK
Q51~53
DATA CONTROL
IC7,8
G.E
(M5227P)
IC2,3
INPUT-SEL (B/2)
GE-ON
GE-OFF
AUDIO
VCR 2
TAPE1
SYNTHETIC-ST ON/OFF
S1
IC9,10
SYNTHETIC STEREO
ST2
DATA
CLK
Q54,56
DATA CONTROL
IC4
ELECTRONIC VOLUME (TC9176P)
IC5
BUFFER AMP
(GAIN 16.5dB)
MUTE 1
Q9,10
MUTE CONTROL
Q7,8
AUDIO SIG. MUTE 2
(X09-2310-11)
TAPE1 REC
TAPE2 REC
VCR1 REC
VCR 2 REC
Q1,2
BUFFER AMP
Q3,4
BUFFER AMP
VS2
VS1
EDIT
Q66,67
VIDEO-SEL CONTROL
EDIT
VS1
VS2
IC11,12
INPUT-SEL (μPD466BC×2)
VCR1
VCR2
VCR3
VCR3→1
VCR2→1
VCR 2
Q63
BUFFER AMP
PICTURE-SIGNAL
MONITOR OUT
VCR1 PLAY
VCR2 PLAY
VCR3 PLAY
Q64
BUFFER AMP
VCR1 REC
Q65
BUFFER AMP
VCR2 REC
Q11~30
MAIN-AMP
(X05-3150 S33) SPEAKER-SEL
A
B
SPEAKER
Q31~35
PROTECTION
OTHER-CH
PHONES

KR-V45

KR-V45

CIRCUIT DESCRIPTION

Description of components.

AUDIO UNIT (X09-2310-11)

<table>
<tr><th>Components</th><th>Application/Function</th><th>Operation/Condition/Compatibility</th></tr>
<tr><td>IC1</td><td>Phono EQ AMP</td><td>MM cartridge</td></tr>
<tr><td>IC2</td><td>Input selecting</td><td>selector Phono/CD/TAPE1/TAPE2</td></tr>
<tr><td>IC3</td><td>Input selecting</td><td>selector audio sig. of VIDEO 1/2/3</td></tr>
<tr><td>IC4</td><td>Electronic Volume</td><td></td></tr>
<tr><td>IC5</td><td>Buffer AMP</td><td>(Voltage gain: 16 dB)</td></tr>
<tr><td>IC7, 8</td><td>Graphic EQ</td><td>5 freq. points</td></tr>
<tr><td>IC9, 10</td><td>Synthetic Stereo</td><td>Buffer AMP/3 stage B.P.F.</td></tr>
<tr><td>IC11, 12</td><td>Picture sig. selecting</td><td>VIDEO 1/2/3</td></tr>
<tr><td>Q1～4</td><td>Buffer AMP (audio sig.)</td><td>VIDEO 1/2 (emitter follower)</td></tr>
<tr><td>Q5, 6</td><td>Audio sig. mute 1 (TAPE REC)</td><td>MUTE-ON at Q47 ON.</td></tr>
<tr><td>Q7, 8</td><td>Audio sig. mute 2 (Electronic VOL out)</td><td>MUTE-ON at Q9 ON.</td></tr>
<tr><td>Q9, 10</td><td>Audio sig. mute control of Q7, 8</td><td></td></tr>
<tr><td>Q11～14</td><td>Power AMP (1st diff AMP)</td><td></td></tr>
<tr><td>Q15～18</td><td>Power AMP (2nd diff AMP)</td><td></td></tr>
<tr><td>Q19, 20</td><td>Power AMP
(Current mirror configuration in A-class stage)</td><td></td></tr>
<tr><td>Q21, 22</td><td>Power AMP (Bias)</td><td></td></tr>
<tr><td>Q23～26</td><td>Power AMN (driver stage)</td><td></td></tr>
<tr><td>Q27～30</td><td>Power AM (Final stage)</td><td></td></tr>
<tr><td>Q31～33</td><td>Current limitter</td><td>Q31 (Q32) detects terminal voltage of emitter resistor CP1 (CP2). When SP terminal is shorted to ground, Q31 (Q32) becomes to ON and Q33 goes to ON. So that regurator circuit (Q34, 35) does not function.</td></tr>
<tr><td>Q34, 35</td><td>Power supply to 1st stage of Power AMP</td><td>Q35 works as ripple filter when Q34 is OFF.</td></tr>
<tr><td>Q36</td><td>Re-set of IC 11 (—picture sig. selecting)</td><td>Q36 cuts VIDEO 3 selecting signal to ICII, when POWER SW is ON/OFF.</td></tr>
<tr><td>Q37</td><td>−30 V AVR</td><td>Display</td></tr>
<tr><td>Q38～40</td><td>+14 V AVR</td><td></td></tr>
<tr><td>Q41～44</td><td>−14 V AVR</td><td><table><tr><td>Status</td><td>Q45</td><td>Q46</td></tr><tr><td>POWER ON</td><td>off</td><td>on</td></tr><tr><td>POWER OFF</td><td>on</td><td>off</td></tr></table></td></tr>
<tr><td>Q45, 46</td><td>+5 V AVR (for microprocessor)</td><td></td></tr>
<tr><td>Q51</td><td>store sig. control (IC2, 3)</td><td></td></tr>
<tr><td>Q52</td><td>data sig. control (IC2, 3)</td><td></td></tr>
<tr><td>Q53</td><td>clock sig. control (IC2, 3)</td><td></td></tr>
<tr><td>Q54</td><td>store sig. control (IC4)</td><td></td></tr>
<tr><td>Q55</td><td>store sig. control (IC4)</td><td></td></tr>
<tr><td>Q56</td><td>clock sig. control (IC4)</td><td></td></tr>
<tr><td>Q57～59</td><td>Relay (KI) control</td><td></td></tr>
<tr><td>Q60～62</td><td>+5 V AVR</td><td>Fip<table><tr><td>Status</td><td>Q60</td><td>Q61</td><td>Q62</td></tr><tr><td>POWER ON</td><td>on</td><td>off</td><td>working</td></tr><tr><td>POWER OFF</td><td>off</td><td>on</td><td>off</td></tr></table></td></tr>
<tr><td>Q63</td><td>Buffer AMP (picture sig. output)</td><td>VIDEO 1 (emitter follower)</td></tr>
<tr><td>Q64</td><td></td><td>VIDEO 2 (emitter follower)</td></tr>
<tr><td>Q65</td><td></td><td>Monitor out (emitter follower)</td></tr>
<tr><td>Q66, 67</td><td>Control of picture sig. selecting</td><td></td></tr>
</table>

CIRCUIT DESCRIPTION

TUNER, μ-COM UNIT (X05-3150-11)

<table>
<tr><th>Components</th><th>Application/Function</th><th>Operation/Condition/Compatibility</th></tr>
<tr><td>IC1</td><td>FM IF/DET, AM MIX/IF/DET</td><td></td></tr>
<tr><td>IC2</td><td>FM MPX</td><td></td></tr>
<tr><td>IC3</td><td>PLL synthe</td><td></td></tr>
<tr><td>IC4</td><td>Microprocessor</td><td>system control</td></tr>
<tr><td>IC5</td><td>Microprocessor</td><td>remote control</td></tr>
<tr><td>IC6~10</td><td>FIP driver</td><td>(transistor array)</td></tr>
<tr><td>IC11</td><td>Frequency display control</td><td>conv. to display frequency (static display)</td></tr>
<tr><td>Q1</td><td>FM IF AMP</td><td></td></tr>
<tr><td>Q2, 3</td><td>TUNE indicating signal</td><td><table><tr><td>status</td><td>Q2</td><td>Q3</td></tr><tr><td>TUNE</td><td>OFF</td><td>ON</td></tr><tr><td>not TUNE</td><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Q4</td><td>AM/FM switching</td><td><table><tr><td></td><td>FM</td><td>AM</td></tr><tr><td>Q4</td><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Q5</td><td>Prevention of wrong STEREO indicating</td><td>Q5 ON when FM TUNE indicator lights on.</td></tr>
<tr><td>Q6</td><td>Buffer AMP</td><td>(emitter follower)</td></tr>
<tr><td>Q7</td><td>Ripple filter</td><td></td></tr>
<tr><td>Q8</td><td>FM + B switching</td><td></td></tr>
<tr><td>Q9, 10</td><td>L. P. F in PLL synthe</td><td></td></tr>
<tr><td>Q11</td><td>FIP driver (TUNE)</td><td>working when TUNE indicator lights on.</td></tr>
<tr><td>Q12</td><td>FIP driver (STEREO)</td><td>working when STEREO indicator lights on.</td></tr>
</table>

ADJUSTMENT

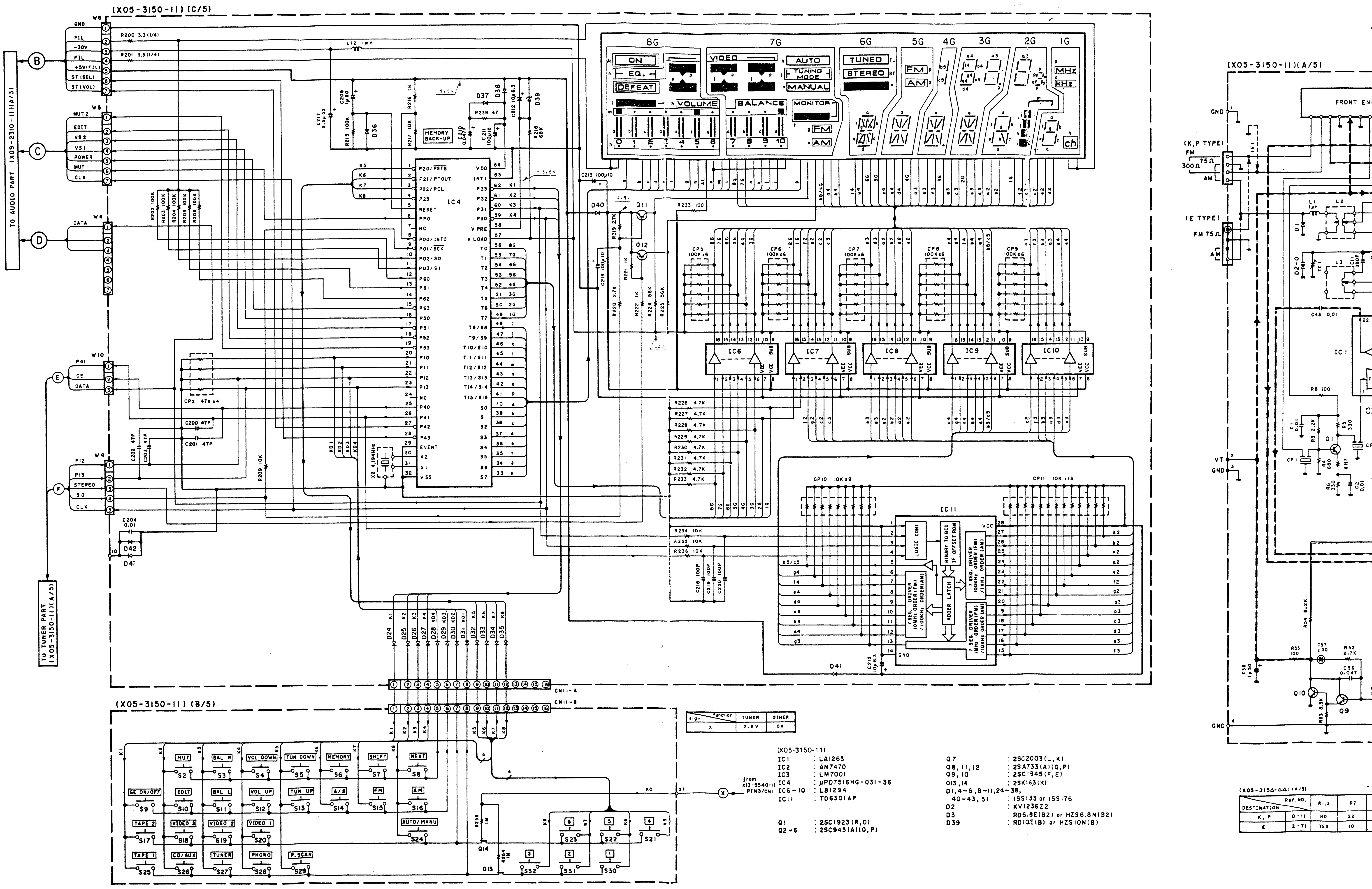
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION	Unless otherwise specified, the individual switches should be set as following: SELECTOR: FM MODE: STEREO						
1	DISCRIMINATOR (1)	(A) 98.0MHz 1kHz,±75kHz dev 60dB(ANT input)	Connect a DC voltmeter between TP8 and TP9.	MONO 98.0MHz	(X05-3150) T2	0V	
2	DISCRIMINATOR (2)	(A) 98.0MHz 1kHz,±75kHz dev 60dB(ANT input)	(B)	MONO 98.0MHz	(X05-3150) T3	Minimum distortion.	
Repeat alignments 1 and 2 several times.							
3	VCO	(A) 98.0MHz 0 dev 60dB(ANT input)	Connect a 330kΩ resistor to TP7. Connect a frequency counter to the resistor via an AC voltmeter.	98.0MHz	(X05-3150) VR3	76.00kHz	
4	DISTORTION (STEREO)	(C) 98.0MHz 1kHz,±68.25kHz dev Selector:L or R Pilot: ±6.75kHz dev 60dB(ANT input)	(B)	98.0MHz	(X05-3150) Front end IFT	Minimum distortion.	
5	SEPARATION	(C) 98.0MHz 1kHz,±68.25kHz dev Selector:L or R Pilot: ±6.75kHz dev 60dB(ANT input)	(B)	98.0MHz	(X05-3150) VR4	Minimum crosstalk. A compromise adjustment may be required if left-to-right and right-to-left separations are unequal.	
AM SECTION	Keep the loop antenna installed. INPUT SELECTOR: AM						
(1)	BAND EDGE (1)	–	Connect a DC voltmeter to TP2.	530kHz (531kHz)	(X05-3150) L3	1.5V	
(2)	BAND EDGE (2)	–	Connect a DC voltmeter to TP2.	1610kHz (1602kHz)	(X05-3150) TC1	8.0V	
Repeat alignments (1) and (2) several times.							
(3)	RF ALIGNMENT (1)	(D) 600(603)kHz 400Hz,30% mod	(B)	600kHz (603kHz)	(X05-3150) L2	Maximum amplitude and symmetry of the oscilloscope display.	
(4)	RF ALIGNMENT (2)	(D) 1400(1404)kHz 400Hz,30% mod	(B)	1400kHz (1404kHz)	(X05-3150) TC2	Maximum amplitude and symmetry of the oscilloscope display.	
Repeat alignments (3) and (4) several times.							
(5)	IF TRANSFORMER	(D) 1000(999)kHz 400Hz,30% mod	(B)	1000kHz (999kHz)	(X05-3150) T1	Maximum amplitude and symmetry of the oscilloscope display.	
AM/FM COMMON SECTION							
6	TUNE INDICATOR THRESHOLD LEVEL	(A) 98.0MHz 0 dev 18dB(ANT input)	–	FM reception 98.0MHz	(X05-3150) VR2	Light	
(6)	TUNE INDICATOR THRESHOLD LEVEL	(D) 1000(999)kHz 20～24dB(ANT input)	–	AM reception 1000(999)kHz	(X05-3150) VR1	Light	
AUDIO SECTION							
7	IDLE CURRENT	–	(E) DC voltmeter CP1(CP2)	Volume: 0	(X09-2310) VR1 (L) VR2 (R)	18mV	

REGLAGE

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU TUNER	POINT DE L'ALIGNEMENT	ALIGNER POUR	FIG.
SECTION MF	Sauf en cas d'indications spéciales, régler chaque commutateur comme suit: SELECTEUR DES ENTRESS: MF MODE: STEREO						
1	DISCRIMINATEUR (1)	(A) 98,0MHz 1kHz.±75kHz dév 60dB(Entrée ANT)	Relier un voltmètre CC entre les TP8 et TP9.	MONO 98,0MHz	(X05-3150) T2	0V	
2	DISCRIMINATEUR (2)	(A) 98,0MHz 1kHz.±75kHz dév 60dB(Entrée ANT)	(B)	MONO 98,0MHz	(X05-3150) T3	Distorsion minimale.	
Répéter les points 1 et 2 plusieurs fois.							
3	OSCILLATEUR CONTROLE PAR LA TENSION	(A) 98,0MHz 0 dév 60dB(Entrée ANT)	Relier une résistance de 330kΩ à TP7. Raccorder un compteur de fréquence à une résistance par l'intèrmediaire d'un voltmètre CA.	98,0MHz	(X05-3150) VR3	76,00kHz	
4	DISTORSION (STEREO)	(C) 98,0MHz 1kHz.±68,25kHz dév Selection:L ou R Signal pilote: ±6,75kHz dév 60dB(Entrée ANT)	(B)	98,0MHz	(X05-3150) Tête H.F. IFT	Distorsion minimale.	
5	SEPARATION	(C) 98,0MHz 1kHz,±68,25kHz dév Selection:L ou R Signal pilote: ±6,75kHz dév 60dB(Entrée ANT)	(B)	98,0MHz	(X05-3150) VR4	Diaphonie minimale. Un compromis de réglage peut être nécessaire si les séparation de gauche à droite et droite à gauche sont inéglage.	
SECTION MA	Laisser l'antenne bouche MA installée. SELECTEUR: AM						
(1)	BORD DE BANDE (1)	–	Relier un voltmètre CC au TP2.	530kHz (531kHz)	(X05-3150) L3	1,5V	
(2)	BORD DE BANDE (2)	–	Relier un voltmètre CC au TP2.	1610kHz (1602kHz)	(X05-3150) TC1	8,0V	
Répéter les points (1) et (2) plusieurs fois.							
(3)	ALIGNEMENT H.T. (1)	(D) 600(603)kHz 400Hz.30% mod	(B)	600kHz (603kHz)	(X05-3150) L2	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(4)	ALIGNEMENT H.T. (2)	(D) 1400(1404)kHz 400Hz.30% mod	(B)	1400kHz (1404kHz)	(X05-3150) TC2	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
Répéter les points (3) et (4) plusieurs fois.							
(5)	TRANSFORMATEUR F.I.	(D) 1000(999)kHz 400Hz.30% mod	(B)	1000kHz (999kHz)	(X05-3150) T1	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
SECTION COMMUNE MA/MF							
6	INDICATEUR DE SYNTONISATION NIVEAU DE SEUIL	(A) 98,0MHz 0 dév 18dB(Entrée ANT)	–	Reception MF 98,0MHz	(X05-3150) VR2	Arrume	
(6)	INDICATEUR DE SYNTONISATION NIVEAU DE SEUIL	(D) 1000(999)kHz 20～24dB(Entrée ANT)	–	Reception MA 1000(999)kHz	(X05-3150) VR1	Arrume	
SECTION AUDIO							
7	COURANA DE POLARISATION	–	(E) Connecter un voltmétre CC CP1(CP2)	Volume: 0	(X09-2310) VR1 (G) VR2 (D)	18mV	

ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	TUNER-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
UKW-EMPFANGSABTEILUNG Außer wenn anders angegeben, die verschiedenen Schalter wie folgt einstellen: EINGANGSUMSCHALTER: FM							
1	DISKRIMINATOR (1)	(A) 98,0MHz 1kHz.±75kHz Hub 60dB(ANT-Eingang)	Einen Gleichspannungsmesser zwischen TP8 und TP9 anschließen.	MONO 98,0MHz	(X05-3150) T2	0V	
2	DISKRIMINATOR (2)	(A) 98,0MHz 1kHz.±75kHz Hub 60dB(ANT-Eingang)	(B)	MONO 98,0MHz	(X05-3150) T3	Minimal Klirrfaktor.	
Abstimmungen 1 und 2 mehrere Male wiederholen.							
3	SPANNUNGS-GEREGELTER OSZILLATOR	(A) 98,0MHz 0 Hub 60dB(ANT-Eingang)	Einen 330kΩ Widerstanden zu TP7 asschließen. Einen Frequenzzähler über einen Wechselspannungs messer an den Widerstand anschließen.	98,0MHz	(X05-3150) VR3	76,00kHz	
4	KLIRRFAKTOR (STEREO)	(C) 98,0MHz 1kHz.±68,25kHz Hub Wähler:L oder R Pilotten: ±6,75kHz Hub 60dB(ANT-Eingang)	(B)	98,0MHz	(X05-3150) Frontende IFT	Minimal Klirrfaktor.	
5	STEREO KANAL TRENNUNG	(C) 98,0MHz 1kHz.±68,25kHz Hub Wähler:L oder R Pilotten: ±6,75kHz Hub 60dB(ANT-Eingang)	(B)	98,0MHz	(X05-3150) VR4	Minimales Übersprechen. Eine Ausgleichregelung kann notwendig sein, falls links-zu-rechts und rechts-zu-links. Trennungen ungleich sind.	
MW-EMPFANGSABTEILUNG Die MW-Rahmenantenne angebracht lassen. WÄHLER: AM							
(1)	BANDKANTE (1)	–	Einen Gleichspannungsmesser zu TP2 anschließen.	530kHz (531kHz)	(X05-3150) L3	1.5V	
(2)	BANDKANTE (2)	–	Einen Gleichspannungsmesser zu TP2 anschließen.	1610kHz (1602kHz)	(X05-3150) TC1	8.0V	
Abstimmungen (1) und (2) mehrere Male wiederholen.							
(3)	HF-ABGLEICH (1)	(D) 600(603)kHz 400Hz.30% mod	(B)	600kHz (603kHz)	(X05-3150) L2	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
(4)	HF-ABGLEICH (2)	(D) 1400(1404)kHz 400Hz.30% mod	(B)	1400kHz (1404kHz)	(X05-3150) TC2	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
Abstimmungen (3) und (4) mehrere Male wiederholen.							
(5)	ZF-ÜBERTRAGER	(D) 1000(999)kHz 400Hz.30% mod	(B)	1000kHz (999)kHz	(X05-3150) T1	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
MW/UKW-EMPFANGSABTEILUNG Die MW/UKW-Rahmenantenne angebracht lassen. WÄHLER: AM/FM							
6	ABSTIMMANZEIGE SCHWELLENPEGEL	(A) 98,0MHz 0 Hub 18dB(ANT-Eingang)	–	UKW-emptang 98,0MHz	(X05-3150) VR2	Einschalen	
(6)	ABSTIMMANZEIGE SCHWELLENPEGEL	(D) 1000(999)kHz 20～24dB(ANT-Eingang)	–	MW-emptang 1000(999)kHz	(X05-3150) VR1	Einschalen	
AUDIO-ABTEILUNG							
7	LEERLAUFSTROM	–	(E) Einen Gleichspannungsmesser über CP1(CP2)	Volume: 0	(X09-2310) VR1 (L) VR2 (R)	18mV	


A
B
C
D
E
F
G
H
I
J
K
1
2
3
4
5
6
7
(X05-3150-11) (C/5)
(X05-3150-11) (B/5)
(X05-3150-11) (A/5)
TO AUDIO PART (X09-2310-11)(A/3)
TO TUNER PART (X05-3150-11)(A/5)
W6
GND
FIL
-30V
FIL
+5V(FIL)
ST(SEL)
ST(VOL)
W5
MUT 2
EDIT
VS 2
VS 1
POWER
MUT 1
CLK
W4
DATA
W10
P41
CE
DATA
W9
F12
P13
STEREO
SD
CLK
IC4
IC6
IC7
IC8
IC9
IC10
IC11
LOGIC CONT
BINARY TO BCD IF OFFSET ROM
ADDER LATCH
7 SEG. DRIVER (10MHz ORDER(FM) /100KHz ORDER(AM))
7 SEG. DRIVER (100KHz ORDER(FM) /1KHz ORDER(AM))
7 SEG. DRIVER (1MHz ORDER(FM) /10KHz ORDER(AM))
CP2 47K x4
CP5 100K x6
CP6 100K x6
CP7 100K x6
CP8 100K x6
CP9 100K x6
CP10 10K x9
CP11 10K x13
MEMORY BACK-UP
X2 4.194MHz
8G
7G
6G
5G
4G
3G
2G
1G
ON
EQ.
DEFEAT
VIDEO
AUTO
TUNING MODE
MANUAL
TUNED
STEREO
FM
AM
MHz
kHz
VOLUME
BALANCE
MONITOR
ch
CN11-A
CN11-B
MUT
BAL R
VOL DOWN
TUN DOWN
MEMORY
SHIFT
NEXT
GE ON/OFF
EDIT
BAL L
VOL UP
TUN UP
A/B
FM
AM
AUTO/MANU
TAPE 2
VIDEO 3
VIDEO 2
VIDEO 1
TAPE 1
CD/AUX
TUNER
PHONO
P.SCAN
from X13-5540-11 PIN3/CN1
FRONT END
(K,P TYPE)
FM
75Ω
300Ω
AM
(E TYPE)
FM 75Ω
AM
GND
VT
IC1
Q1
Q9
Q10
Q11
Q12
Q13
Q14

sig. \ function	TUNER	OTHER
X	12.8V	0V

(X05-3150-11)

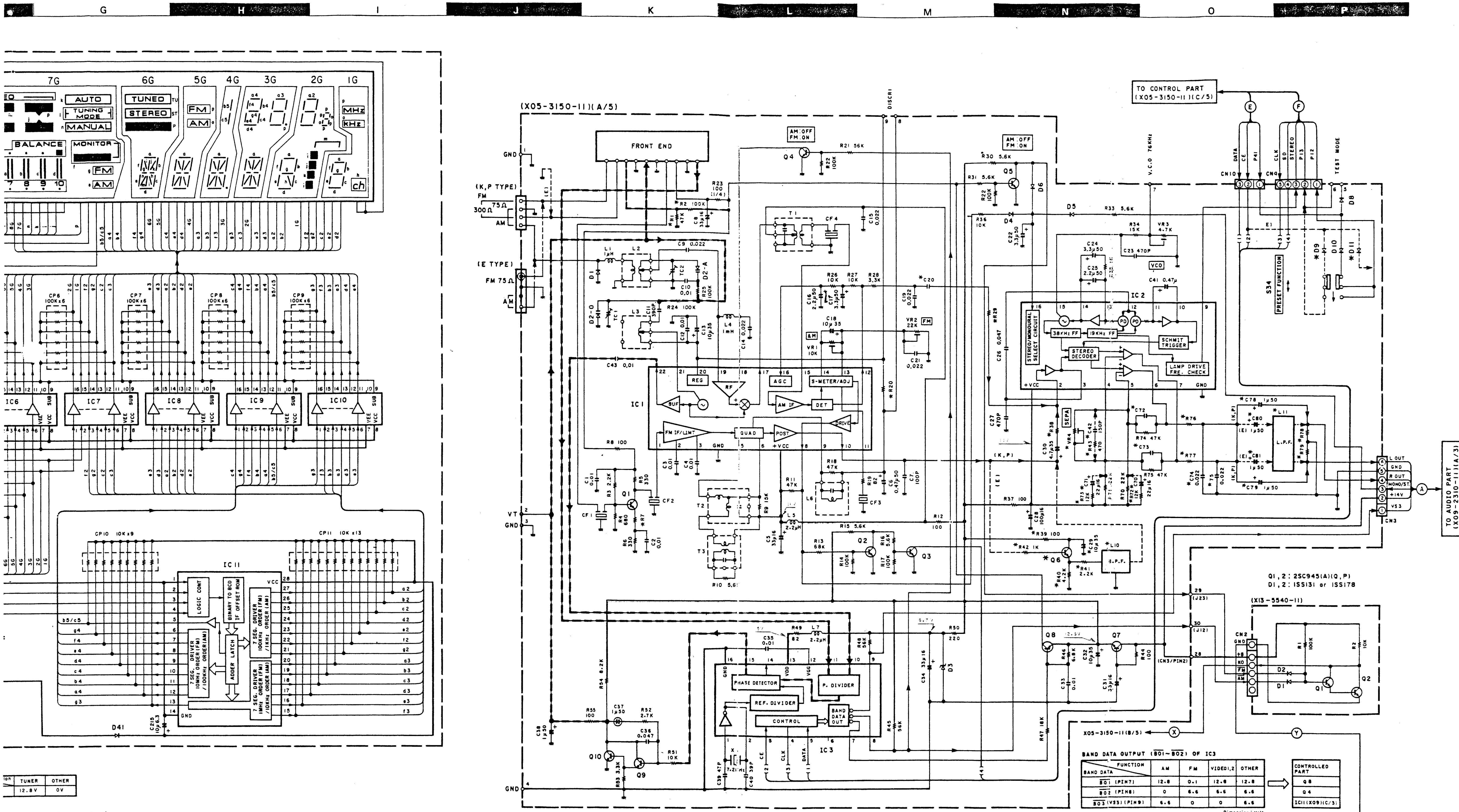
IC1 : LA1265
IC2 : AN7470
IC3 : LM7001
IC4 : μPD7516HG-031-36
IC6～10 : LB1294
IC11 : TD6301AP

Q1 : 2SC1923(R,O)
Q2～6 : 2SC945(A)(Q,P)

Q7 : 2SC2003(L,K)
Q8, 11, 12 : 2SA733(A)(Q,P)
Q9, 10 : 2SC1845(F,E)
Q13, 14 : 2SK163(K)
D1, 4～6, 8～11, 24～38, 40～43, 51 : 1SS133 or 1SS176
D2 : KV1236Z2
D3 : RD6.8E(B2) or HZS6.8N(B2)
D39 : RD10E(B) or HZS10N(B)

(X05-315△-△△) (A/3)

DESTINATION \ Ref. NO.		R1,2	R7
K, P	0-11	NO	22
E	2-71	YES	10


G
H
I
J
K
L
M
N
O
P
7G
6G
5G
4G
3G
2G
1G
AUTO
TUNING MODE
MANUAL
TUNED
STEREO
FM
AM
MHz
kHz
BALANCE
MONITOR
ch
CP6 100K×6
CP7 100K×6
CP8 100K×6
CP9 100K×6
IC6
IC7
IC8
IC9
IC10
CP10 10K×9
CP11 10K×13
IC11
LOGIC CONT
BINARY TO BCD IF OFFSET ROM
ADDER LATCH
7 SEG. DRIVER (10MHz ORDER(FM) /100KHz ORDER(AM))
7 SEG. DRIVER (100KHz ORDER(FM) /1KHz ORDER(AM))
7 SEG. DRIVER (1MHz ORDER(FM) /10KHz ORDER(AM))
D41
C215 10μ6.3
(X05-3150-11)(A/5)
FRONT END
(K,P TYPE)
FM
75Ω
300Ω
AM
(E TYPE)
FM 75Ω
AM
GND
VT
IC1
BUF
REG
RF
AGC
AM IF
DET
S-METER/ADJ
FM IF/LMT
QUAD
POST
DRIVE
AM:OFF FM:ON
DISCRI
IC2
STEREO/MONOURAL SELECT CIRCUIT
38KHz FF
19KHz FF
STEREO DECODER
SCHMIT TRIGGER
LAMP DRIVE FRE. CHECK
VCO
SEPA
L.P.F.
S.P.F.
IC3
PHASE DETECTOR
P. DIVIDER
REF. DIVIDER
CONTROL
BAND DATA OUT
X 7.2MHz
CE
CLK
DATA
TO CONTROL PART (X05-3150-11)(C/5)
V.C.O 76KHz
TEST MODE
S34 PRESET FUNCTION
CN10
CN9
CN3
L OUT
GND
R OUT
MONO/ST
+14V
VS3
TO AUDIO PART (X09-2310-11)(A/3)
Q1,2 : 2SC945(A)(Q,P)
D1,2 : 1SS131 or 1SS178
(X13-5540-11)
CN2
GND
+B
KO
FM
AM
(CN3/PIN2)
X05-3150-11(B/5)
X09-2310-11 (A/3)

BAND DATA OUTPUT ($\overline{B01}$~$\overline{B02}$) OF IC3

FUNCTION / BAND DATA	AM	FM	VIDEO1,2	OTHER
$\overline{B01}$ (PIN7)	12.8	0.1	12.8	12.8
$\overline{B02}$ (PIN8)	0	6.6	6.6	6.6
$\overline{B03}$ (VS3) (PIN9)	6.6	0	0	6.6

Dimension : Volt

CONTROLLED PART
Q8
Q4
IC11(X09)(C/3)

ion	TUNER	OTHER
	12.8V	0V

(X05-3150-11)

IC1 : LA1265
IC2 : AN7470
IC3 : LM7001
IC4 : μPD7516HG-031-36
IC6 ~ 10 : LB1294
IC11 : TD6301AP

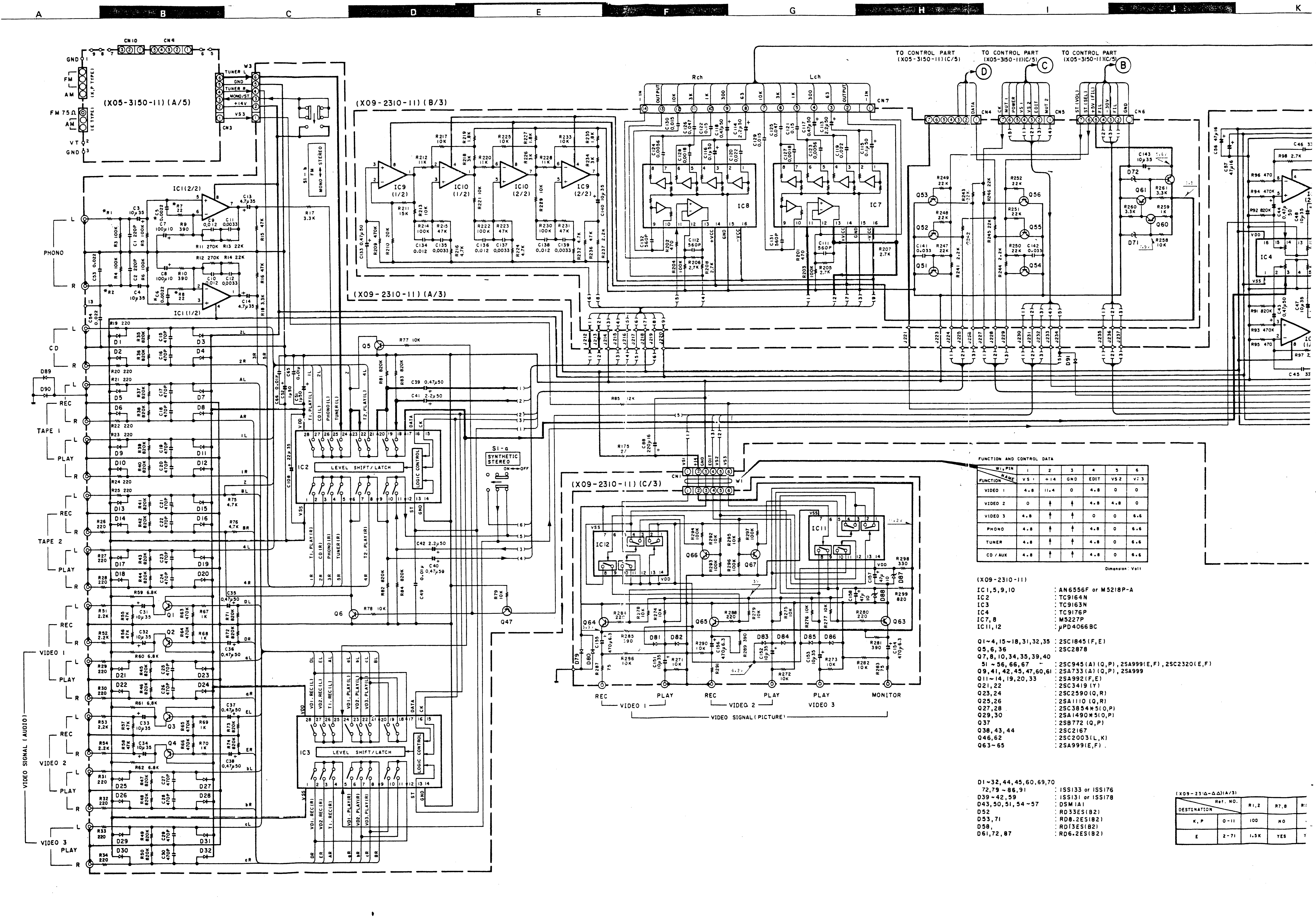
from X13-5540-11 PIN3/CN1

Q1 : 2SC1923(R,O)
Q2 ~ 6 : 2SC945(A)(Q,P)

Q7 : 2SC2003(L,K)
Q8, 11, 12 : 2SA733(A)(Q,P)
Q9, 10 : 2SC1845(F,E)
Q13, 14 : 2SK163(K)
D1, 4~6, 8~11, 24~38, 40~43, 51 : 1SS133 or 1SS176
D2 : KV1236Z2
D3 : RD6.8E(B2) or HZS6.8N(B2)
D39 : RD10E(B) or HZS10N(B)

(X05-315Δ-ΔΔ)(A/3)

DESTINATION	Ref. NO.	R1,2	R7	R20	R29	R38	R39~43, 72,73	R76,77	R78,79	C20	C29,42 70,71	C72,73	C74,75	C78,79	C80,81	D9,11	Q6	L10,11	VR4
K, P	0-11	NO	22	15K	51K	39K	NO	3.6K	220K	0.027	NO	150P	YES	YES	NO	NO	NO	NO	470K
E	2-71	YES	10	43K	68K	47K	YES	3.3K	3.3K	0.022	YES	1000P	NO	NO	YES	YES	YES	YES	330K


A
B
C
D
E
F
G
H
I
J
K
2
3
4
5
6
7
(X05-3150-11) (A/5)
(X09-2310-11) (B/3)
(X09-2310-11) (A/3)
(X09-2310-11) (C/3)
TO CONTROL PART (X05-3150-11)(C/5)
TO CONTROL PART (X05-3150-11)(C/5)
TO CONTROL PART (X05-3150-11)(C/5)
Rch
Lch
CN3
CN4
CN5
CN6
CN7
CN9
CN10
CN1
W1
W3
IC1(2/2)
IC1(1/2)
IC2
IC3
IC4
IC7
IC8
IC9 (1/2)
IC9 (2/2)
IC10 (1/2)
IC10 (2/2)
IC11
IC12
LEVEL SHIFT/LATCH
LOGIC CONTROL
S1-a SYNTHETIC STEREO
S1-b FM MONO STEREO
PHONO
CD
REC
TAPE 1
PLAY
TAPE 2
VIDEO 1
VIDEO 2
VIDEO 3
VIDEO SIGNAL (AUDIO)
REC
PLAY
REC
PLAY
PLAY
MONITOR
VIDEO 1
VIDEO 2
VIDEO 3
VIDEO SIGNAL (PICTURE)
GND
FM
AM
(K,P TYPE)
FM 75Ω
AM
(E TYPE)
VT
GND
TUNER L
GND
TUNER R
MONO/ST.
+14V
VS3
DATA
CK
MUT 1
POWER
VS 1
VS 2
EDIT
MUT 2
ST (VOL)
ST (SEL)
+12V (FIL)
FIL
-30V
FIL
GND

FUNCTION AND CONTROL DATA

FUNCTION \ W1, PIN / NAME	1 VS 1	2 +14	3 GND	4 EDIT	5 VS 2	6 VS 3
VIDEO 1	4.8	11.4	0	4.8	0	0
VIDEO 2	0	↑	↑	4.8	4.8	0
VIDEO 3	4.8	↑	↑	0	0	6.6
PHONO	4.8	↑	↑	4.8	0	6.6
TUNER	4.8	↑	↑	4.8	0	6.6
CD / AUX	4.8	↑	↑	4.8	0	6.6

Dimension : Volt

(X09-2310-11)

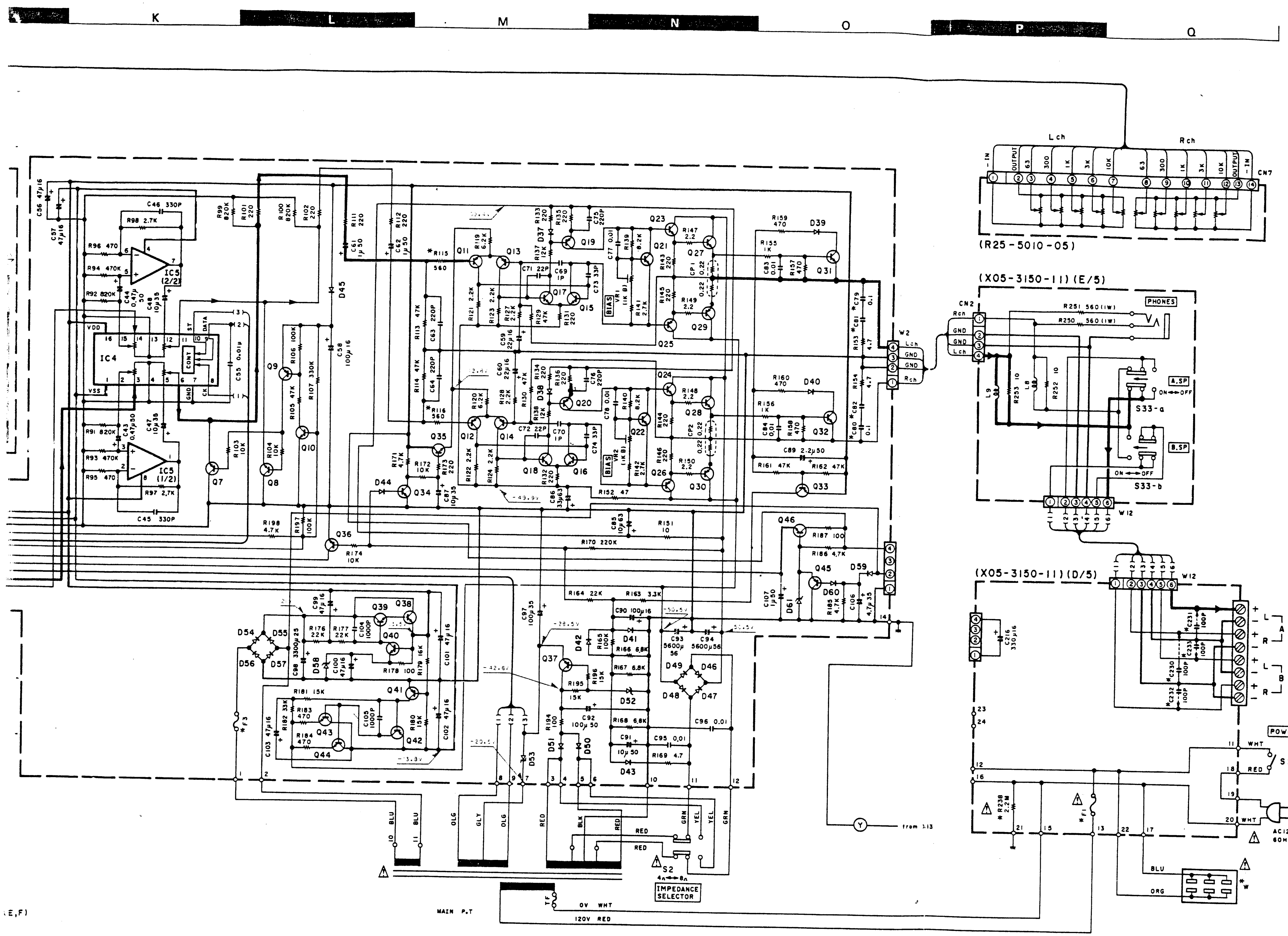
IC1,5,9,10 : AN6556F or M5218P-A
IC2 : TC9164N
IC3 : TC9163N
IC4 : TC9176P
IC7,8 : M5227P
IC11,12 : μPD4066BC

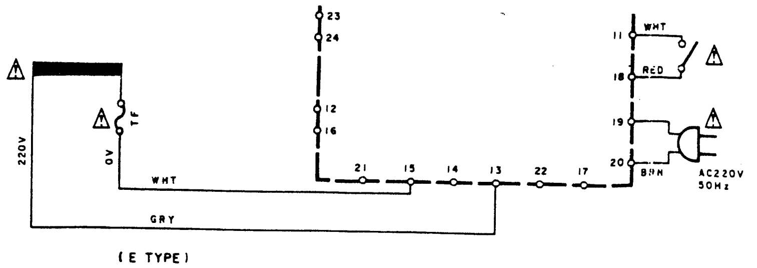
Q1~4,15~18,31,32,35 : 2SC1845(F,E)
Q5,6,36 : 2SC2878
Q7,8,10,34,35,39,40
51~56,66,67 : 2SC945(A)(Q,P), 2SA999(E,F), 2SC2320(E,F)
Q9,41,42,45,47,60,61 : 2SA733(A)(Q,P), 2SA999
Q11~14,19,20,33 : 2SA992(F,E)
Q21,22 : 2SC3419 (Y)
Q23,24 : 2SC2590(Q,R)
Q25,26 : 2SA1110 (Q,R)
Q27,28 : 2SC3854*5(O,P)
Q29,30 : 2SA1490*5(O,P)
Q37 : 2SB772 (Q,P)
Q38,43,44 : 2SC2167
Q46,62 : 2SC2003(L,K)
Q63~65 : 2SA999(E,F).

D1~32,44,45,60,69,70
72,79~86,91 : 1SS133 or 1SS176
D39~42,59 : 1SS131 or 1SS178
D43,50,51,54~57 : DSM1A1
D52 : RD33ES(B2)
D53,71 : RD8.2ES(B2)
D58, : RD13ES(B2)
D61,72,87 : RD6.2ES(B2)

(X09-23Δ-ΔΔ)(A/3)

DESTINATION \ Ref. NO.		R1,2	R7,8
K, P	0-11	100	NO
E	2-71	1.5K	YES


K
L
M
N
O
P
Q
IC4
IC5 (2/2)
IC5 (1/2)
BIAS
VR1
VR2
Lch
Rch
CN7
(R25-5010-05)
(X05-3150-11) (E/5)
PHONES
CN2
W2
A.SP
B.SP
S33-a
S33-b
ON ↔ OFF
W12
(X05-3150-11) (D/5)
POWER
S1
IMPEDANCE SELECTOR
S2
MAIN P.T
0V WHT
120V RED
AC120V 60Hz
from 3.13
BLU
ORG
W


220V
0V
TF
WHT
GRY
AC220V 50Hz

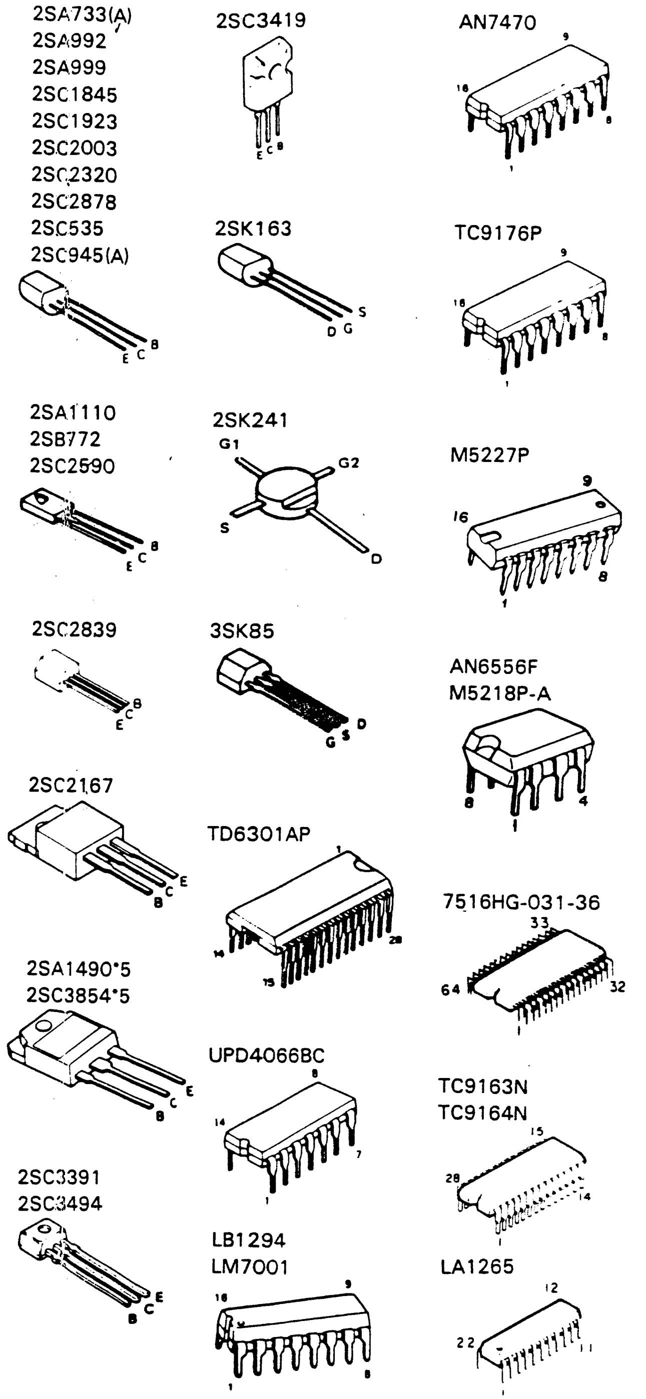
(E TYPE)

(X05-315Δ-ΔΔ)(D/5)(E/5)

DESTINATION \ Ref. NO.		R238	C230～233	F1	W
K, P	0-11	YES	NO	5A	YES
E	2-71	NO	YES	2.5A	NO

231Δ-ΔΔ)(A/3)

NATION \ Ref. NO.		R1,2	R7,8	R115,118	C5,6	C79,80	C81,82	F3
K, P	0-11	100	NO	JP	NO	JP	0.047	1.5A
E	2-71	1.5K	YES	YES	YES	YES	0.1	T1.6A


2SA733(A)
2SA992
2SA999
2SC1845
2SC1923
2SC2003
2SC2320
2SC2878
2SC535
2SC945(A)
2SC3419
AN7470
2SK163
TC9176P
2SA1110
2SB772
2SC2590
2SK241
M5227P
2SC2839
3SK85
AN6556F
M5218P-A
2SC2167
TD6301AP
7516HG-031-36
2SA1490*5
2SC3854*5
UPD4066BC
TC9163N
TC9164N
2SC3391
2SC3494
LB1294
LM7001
LA1265
E
C
B
D
G
S
G1
G2

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

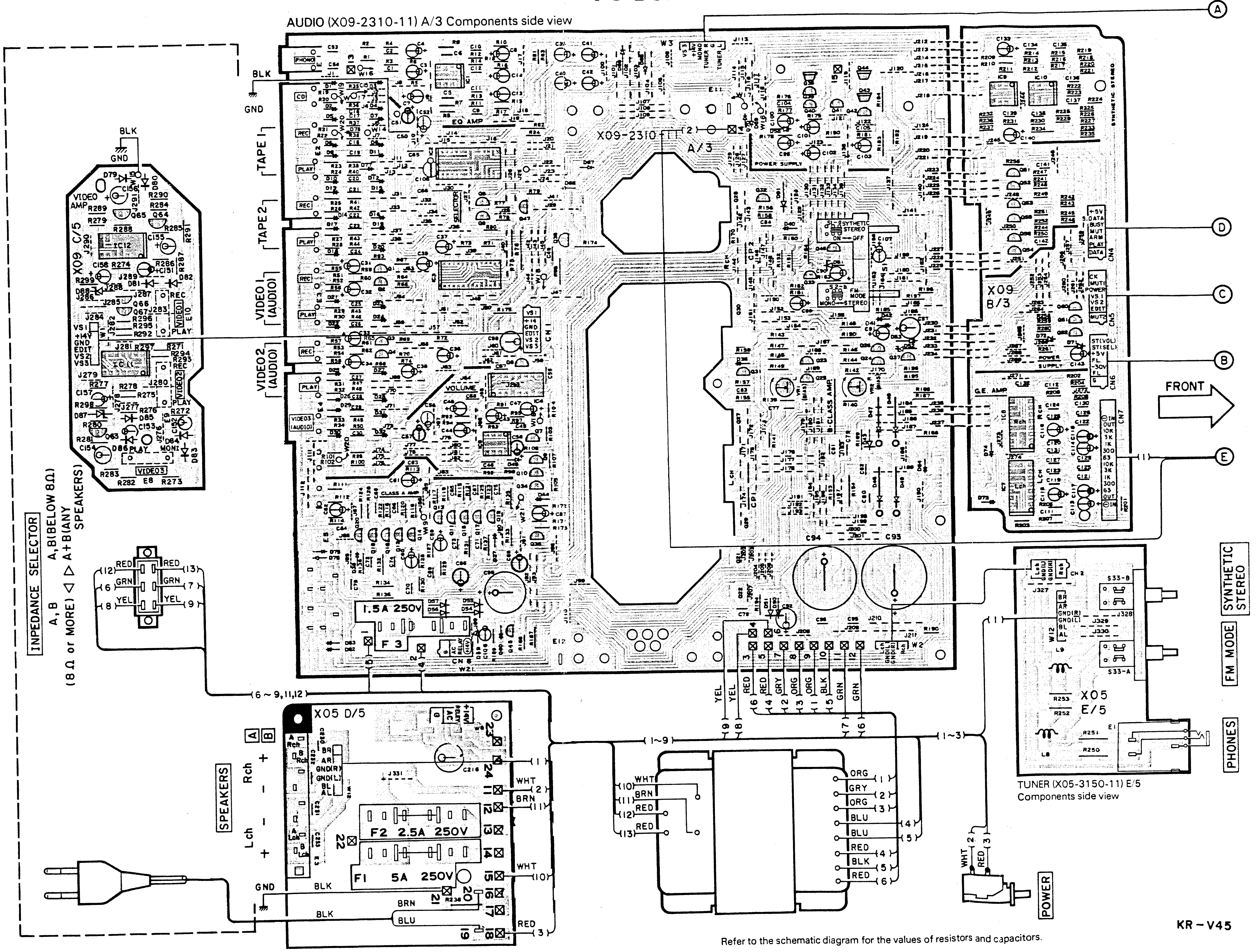
- DC voltages are measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.
- Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
- Die angegebenen Gleichspannungswerte wurden mit einem hochohmigen Voltmeter gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig.

KR-V45
KENWOOD

KR-V45 KR-V45

PC BOARD

AUDIO (X09-2310-11) A/3 Components side view



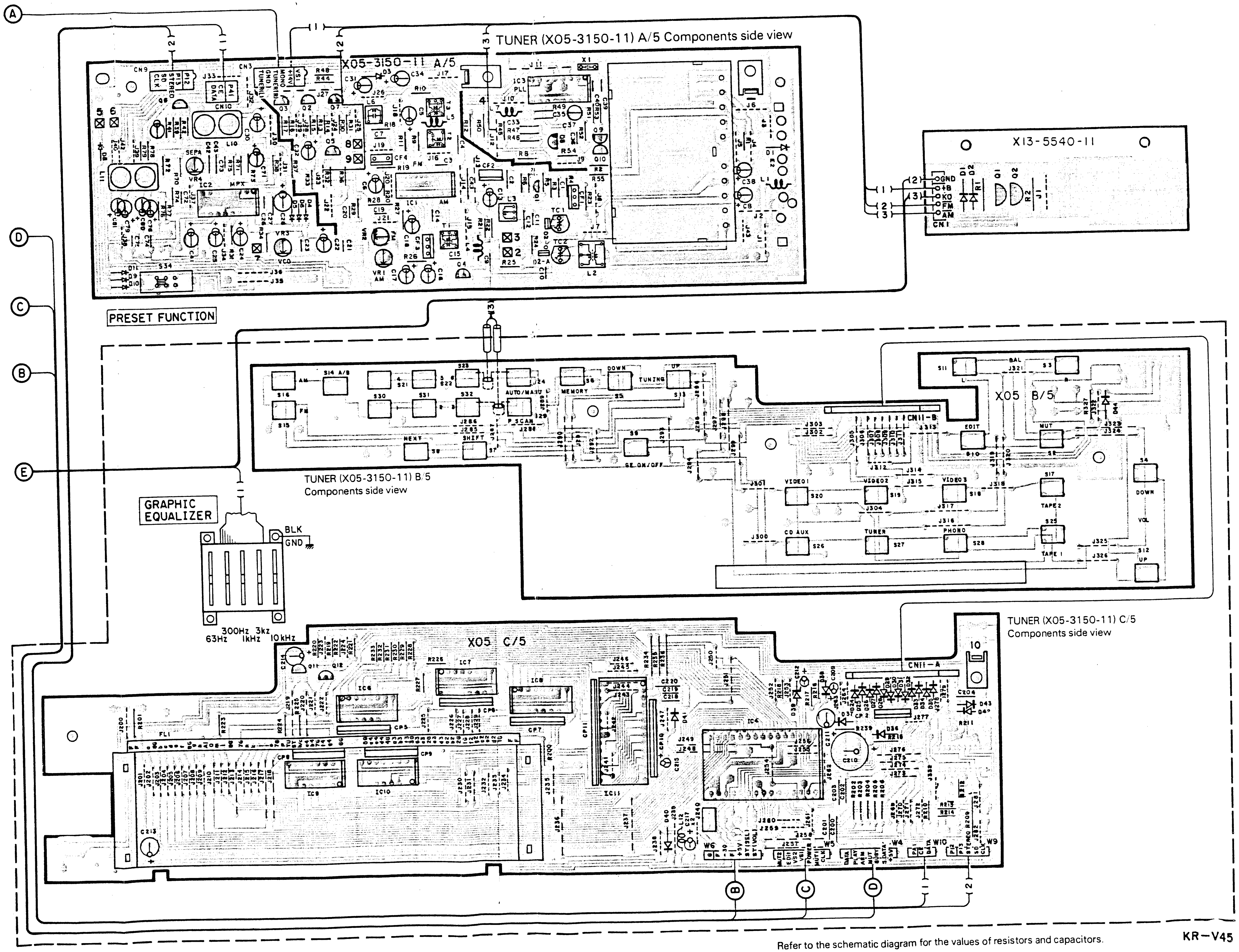
Ⓐ
Ⓑ
Ⓒ
Ⓓ
Ⓔ
BLK
GND
PHONO
CD
TAPE 1
TAPE 2
VIDEO 1 (AUDIO)
VIDEO 2 (AUDIO)
VIDEO3 (AUDIO)
REC
PLAY
EQ AMP
SELECTOR
VOLUME
CLASS A AMP
B CLASS AMP
POWER SUPPLY
X09-2310
A/3
X09 B/3
X09 C/5
VIDEO AMP
G.E. AMP
SYNTHETIC STEREO
FM MODE
MONO STEREO
1.5A 250V
F3
CN 6
W21
C94
C93
Lch
Rch
+5V
S.DATA
BUSY
MUT
ARM
PLAY
DATA
CN4
CK
MUTI
POWER
VS1
VS2
EDIT
MUT2
CN5
ST(VOL)
ST(SEL)
+5V
FL
-30V
FL
CN6
CN7
FRONT
INPEDANCE SELECTOR
A, B   A, B(BELOW 8Ω)
(8Ω or MORE) ◁ ▷ A+B(ANY SPEAKERS)
RED
GRN
YEL
(12)
(6)
(8)
(13)
(7)
(9)
(6 ~ 9, 11, 12)
X05 D/5
SPEAKERS
Rch +
Rch −
Lch −
Lch +
Ⓐ
Ⓑ
F2 2.5A 250V
F1 5A 250V
WHT
BRN
BLU
BLK
GND
(1 ~ 9)
(1 ~ 3)
YEL
RED
GRY
ORG
BLK
GRN
WHT
BRN
RED
ORG
GRY
ORG
BLU
BLU
RED
BLK
RED
X05 E/5
S33-A
S33-B
CN 2
PHONES
POWER

TUNER (X05-3150-11) E/5
Components side view

Refer to the schematic diagram for the values of resistors and capacitors.

KR-V45 KR-V45

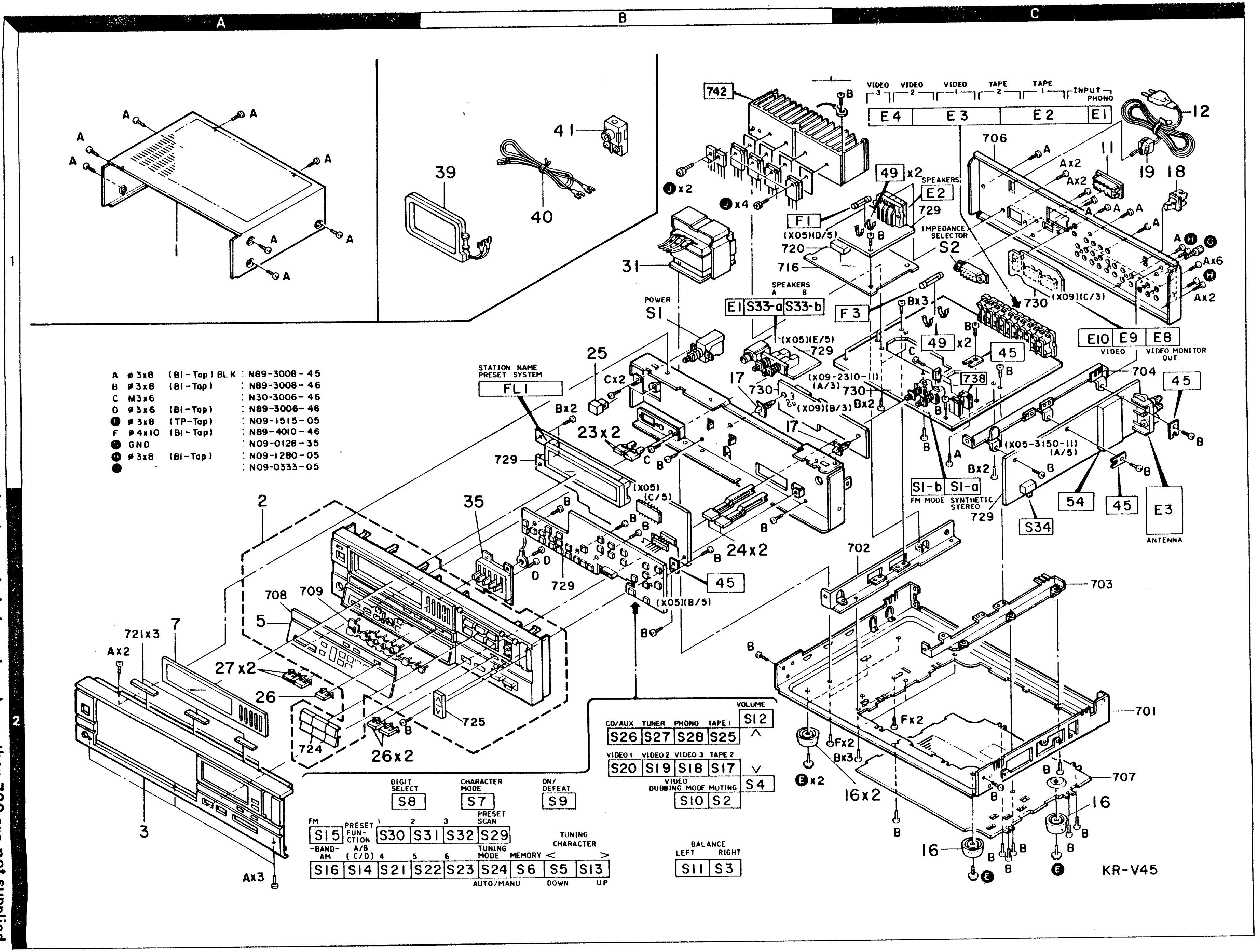
PC BOARD



Ⓐ
Ⓑ
Ⓒ
Ⓓ
Ⓔ
TUNER (X05-3150-11) A/5 Components side view
X05-3150-11 A/5
X13-5540-11
GND
+B
KO
FM
AM
CN1
PRESET FUNCTION
X05 B/5
TUNER (X05-3150-11) B/5
Components side view
GRAPHIC
EQUALIZER
BLK
GND
63Hz
300Hz
1kHz
3kz
10kHz
X05 C/5
TUNER (X05-3150-11) C/5
Components side view
CN11-A
CN11-B

Refer to the schematic diagram for the values of resistors and capacitors.

EXPLODED VIEW (MAIN UNIT)


A
B
C
1
2
742
VIDEO 3
VIDEO 2
VIDEO 1
TAPE 2
TAPE 1
INPUT PHONO
E4
E3
E2
E1
12
706
11
19
18
41
39
40
31
49 x2
SPEAKERS
E2
729
F1
(X05)(D/5)
720
716
IMPEDANCE SELECTOR
S2
SPEAKERS A B
POWER
S1
E1
S33-a
S33-b
F3
Bx3
730
(X09)(C/3)
E10
E9
E8
VIDEO
VIDEO MONITOR OUT
Ax6
Ax2
Ax2
45
738
(X05)(E/5)
25
Cx2
17
730
(X09)(B/3)
Bx2
(X09-2310-11)
(A/3)
704
(X05-3150-11)
(A/5)
STATION NAME PRESET SYSTEM
FL1
23 x2
729
(X05)
(C/5)
S1-b
S1-a
FM MODE
SYNTHETIC STEREO
54
E3
ANTENNA
S34
2
35
24x2
702
703
(X05)(B/5)
708
709
5
721x3
7
27 x2
26
724
26x2
725
3
Ax2
Ax3
701
707
16
16x2
Fx2
Ex2
VOLUME
S12
CD/AUX
TUNER
PHONO
TAPE 1
S26
S27
S28
S25
VIDEO 1
VIDEO 2
VIDEO 3
TAPE 2
S20
S19
S18
S17
S4
VIDEO DUBBING MODE
MUTING
S10
S2
DIGIT SELECT
S8
CHARACTER MODE
S7
ON/DEFEAT
S9
FM
PRESET FUNCTION
PRESET SCAN
S15
S30
S31
S32
S29
-BAND- AM
A/B (C/D)
TUNING MODE
MEMORY
TUNING CHARACTER
S16
S14
S21
S22
S23
S24
S6
S5
S13
AUTO/MANU
DOWN
UP
BALANCE
LEFT
RIGHT
S11
S3
KR-V45

A	ø3x8	(BI-Tap) BLK	: N89-3008-45
B	ø3x8	(BI-Tap)	: N89-3008-46
C	M3x6		: N30-3006-46
D	ø3x6	(BI-Tap)	: N89-3006-46
🅔	ø3x8	(TP-Tap)	: N09-1515-05
F	ø4x10	(BI-Tap)	: N89-4010-46
🅖	GND		: N09-0128-35
🅗	ø3x8	(BI-Tap)	: N09-1280-05
🅙			: N09-0333-05

Parts with the exploded numbers larger than 700 are not supplied.

KR-V45

PARTS LIST

⁎ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
				KR-V45		
1	1A	⁎	A01-1488-01	METALLIC CABINET		
2	2A	⁎	A22-0574-02	SUB PANEL ASSY		
3	2A	⁎	A20-4845-02	PANEL		
5	2A	⁎	B03-2057-03	DRESSING PLATE		
7	2A	⁎	B03-2055-03	DRESSING PLATE		
-			B46-0092-03	WARRANTY CARD	K	
-			B46-0121-03	WARRANTY CARD	P	
-			B46-0122-13	WARRANTY CARD	E	
-		⁎	B50-6186-00	INSTRUCTION MANUAL(ENGLISH)	K	
-		⁎	B50-6187-00	INSTRUCTION MANUAL(ENG,FRE)	P	
-		⁎	B50-6190-00	INSTRUCTION MANUAL(G,D,F)	E	
-			B58-0245-33	CAUTION CARD (FTZ)	E	
-			B58-0269-04	CAUTION CARD	K	
⚠ 11	1C	⁎	E03-0086-05	AC OUTLET	KP	
⚠ 12	1C		E30-0459-05	AC POWER CORD	E	
⚠ 12	1C		E30-0974-05	AC POWER CORD	KP	
-		⁎	H01-7192-04	ITEM CARTON CASE		
-		⁎	H10-1889-02	POLYSTYRENE FOAMED FIXTURE		
-			H25-0181-04	PROTECTION BAG (150X260X0.05)		
-			H25-0224-04	PROTECTION BAG (800X400)		
-			H25-0232-04	PROTECTION BAG (235X350)		
16	2C		J02-0170-04	FOOT		
17	1B		J19-0506-05	UNIT HOLDER		
18	1C		J19-0626-12	ANTENNA HOLDER		
⚠ 19	1C		J42-0083-05	POWER CORD BUSHING	KP	
-			J61-0307-05	WIRE BAND		
23	1B		K27-1264-04	KNOB (BUTTON) SPEAKERS		
24	2B	⁎	K27-1647-04	KNOB (BUTTON) FM MODE,SYNTHE		
25	1B		K29-2001-04	KNOB ASSY(BUTTON)POWER		
26	2A	⁎	K29-2422-04	KNOB (BUTTON)EQ,DUBBING,MUTING		
27	2A	⁎	K29-2425-04	KNOB (BUTTON)SEL,CHAR MODE		
⚠ 31	1B	⁎	L01-7141-05	POWER TRANSFORMER	K	
⚠ 31	1B	⁎	L01-7142-05	POWER TRANSFORMER	E	
⚠ 31	1B	⁎	L01-7147-05	POWER TRANSFORMER	P	
E	2B,2C		N09-1515-05	TAPPING SCREW (⌀3X8)		
G	1C		N08-0128-35	BINDING POST (GND)		
H	1C		N09-1280-05	TAPTITE SCREW (⌀3X8)		
35	2B	⁎	R29-5010-05	POTENTIOMETER(5KEY,20K)EQ		
⚠ S1	1B		S40-1073-05	PUSH SWITCH (POWER)		
⚠ S2	1C		S31-2113-05	SLIDE SWITCH (IMPEDANCE SEL)		
39	1B		T90-0104-25	LOOP ANTENNA		
40	1B		T90-0132-05	T TYPE ANTENNA		
41	1B		T90-0136-05	ANTENNA ADAPTOR	E	
				TUNER UNIT (X05-3150-11)		
C1 ,2			C91-0769-05	CERAMIC 0.01UF M		
C3			CK45FF1H103Z	CERAMIC 0.010UF Z		
C4			C91-0769-05	CERAMIC 0.01UF M		
C5			CE04KW1C330M	ELECTRO 33UF 16WV		
C6			CE04KW1HR47M	ELECTRO 0.47UF 50WV		
C7			CC45FSL1H101J	CERAMIC 100PF J		

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C8			CE04KW1C330M	ELECTRO 33UF 16WV		
C9			CK45FF1H223Z	CERAMIC 0.022UF Z		
C10			CK45FF1H103Z	CERAMIC 0.010UF Z		
C11			CQ09FS1H391JY0	POLYSTY 390PF J		
C12			C91-0769-05	CERAMIC 0.01UF M		
C13			CE04KW1V100M	ELECTRO 10UF 35WV		
C14 ,15			CK45FF1H223Z	CERAMIC 0.022UF Z		
C16			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C17			CE04KW1H3R3M	ELECTRO 3.3UF 50WV		
C18			CE04KW1V100M	ELECTRO 10UF 35WV		
C19			CF92FV1H223J	MF 0.022UF J	KP	
C19 ,20			CF92FV1H223J	MF 0.022UF J	E	
C20			CF92FV1H273J	MF 0.027UF J	KP	
C21			CK45FF1H223Z	CERAMIC 0.022UF Z		
C22			CE04KW1H3R3M	ELECTRO 3.3UF 50WV		
C23			CQ09FS1H471JY0	POLYSTY 470PF J		
C24			CE04KW1H3R3M	ELECTRO 3.3UF 50WV		
C25			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C26			CF92FV1H473J	MF 0.047UF J		
C27			C91-0753-05	CERAMIC 470PF K		
C28			CE04KW1C101M	ELECTRO 100UF 16WV		
C29			CE04KW1V100M	ELECTRO 10UF 35WV	E	
C30			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C31			CE04KW1C330M	ELECTRO 33UF 16WV		
C32			CE04KW1V100M	ELECTRO 10UF 35WV		
C33			C91-0769-05	CERAMIC 0.01UF M		
C34			CE04KW1C330M	ELECTRO 33UF 16WV		
C35			C91-0769-05	CERAMIC 0.01UF M		
C36			CF92FV1H473J	MF 0.047UF J		
C37			C90-1349-05	ALMINIUM ELECTROLYTIC C.		
C38			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C39			CC45FCH1H470J	CERAMIC 47PF J		
C40			CC45FCH1H390J	CERAMIC 39PF J		
C41			CE04KW1HR47M	ELECTRO 0.47UF 50WV		
C42			C91-0747-05	CERAMIC 150PF K	E	
C43			C91-0769-05	CERAMIC 0.01UF M		
C70 ,71			CE04KW1C220M	ELECTRO 22UF 16WV	E	
C72 ,73			CC45FSL1H151J	CERAMIC 150PF J	KP	
C72 ,73			CF92FV1H102J	MF 1000PF J	E	
C74 ,75			CF92FV1H223J	MF 0.022UF J	KP	
C78 ,79			CE04KW1H010M	ELECTRO 1.0UF 50WV	KP	
C80 ,81			CE04KW1H010M	ELECTRO 1.0UF 50WV	E	
C200-203			C91-0737-05	CERAMIC 47PF J		
C204			C91-0769-05	CERAMIC 0.01UF M		
C209			CE04JW1H010M	ELECTRO 1.0UF 50WV		
C210			C91-0789-05	BACKUP C 0.047F		
C211		*	CE04JW1A101M	ELECTRO 100UF 10WV		
C212			CE04JW0J100M	ELECTRO 10UF 6.3WV		
C213,214		*	CE04JW1A101M	ELECTRO 100UF 10WV		
C215			CE04JW0J100M	ELECTRO 10UF 6.3WV		
C216			CE04KW1C331M	ELECTRO 330UF 16WV		
C217		*	CE04JW1V3R3M	ELECTRO 3.3UF 35WV		
C218-220			C91-0745-05	CERAMIC 100PF K		
C230-233			CK45FB1H471K	CERAMIC 470PF K	E	
TC1 ,2			C05-0303-05	CERAMIC TRIMMER CAPACITOR(20PF		

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45	1C,2C		E23-0125-05	TERMINAL (GND)		
E1	1B		E11-0162-05	PHONE JACK (3P)		
E2	1C		E20-0823-05	LOCK TERMINAL BOARD(8P)SPEAKER		
E3	2C		E20-0318-05	SCREW TERMINAL BOARD(2P)ANT	E	
E3	2C		E20-0452-05	SCREW TERMINAL BOARD(4P)ANT	KP	
⚠ F1	1B		F05-2525-05	FUSE (SEMKO) (250V T2.5A)	E	
⚠ F1	1B		F06-5022-05	FUSE (UL) (250V 5A)	KP	
49	1C		J13-0041-05	FUSE CLIP (ø6)	KP	
49	1C		J13-0054-05	FUSE CLIP (ø5)	E	
CF1 ,2			L72-0140-05	CERAMIC FILTER	KP	
CF1 ,2			L72-0190-05	CERAMIC FILTER	E	
CF3			L72-0099-05	CERAMIC FILTER		
CF4			L72-0096-05	CERAMIC FILTER		
L1			L40-1092-14	SMALL FIXED INDUCTOR(1.0UH,M)		
L2			L31-0509-05	MW-RF COIL		
L3			L32-0277-15	MW OSCILLATING COIL		
L4			L40-1021-14	SMALL FIXED INDUCTOR(1.0MH,K)		
L5			L40-2292-14	SMALL FIXED INDUCTOR(2.2UH,M)		
L6			L39-0128-05	PEAKING COIL		
L7			L40-2292-14	SMALL FIXED INDUCTOR(2.2UH,M)		
L8 ,9			L39-0085-05	PHASE-COMPENSATION COIL		
L10			L79-0125-05	LC FILTER	E	
L11			L79-0140-05	LC FILTER	E	
L12			L40-1021-14	SMALL FIXED INDUCTOR(1.0MH,K)		
T1			L30-0362-05	AM IFT		
T2		*	L30-0447-05	FM IFT		
T3		*	L30-0448-05	FM IFT		
X1			L77-0578-05	CRYSTAL RESONATOR(7.2MHZ)		
X2			L78-0209-05	RESONATOR (4.194000MHZ)		
CP2			R90-0202-05	MULTI-COMP 47KX4 J 1/6W		
CP5 -9			R90-0426-05	MULTI-COMP 100KX6 J 1/6W		
CP10			R90-0441-05	MULTI-COMP 10KX9 J 1/6W		
CP11			R90-0416-05	MULTI-COMP 10KX13 J 1/6W		
R12			RD14AB2E101J	FL-PROOF RD 100 J 1/4W		
R23			RD14AB2E101J	FL-PROOF RD 100 J 1/4W		
R37			RD14AB2E101J	FL-PROOF RD 100 J 1/4W		
R50			RD14AB2E221J	FL-PROOF RD 220 J 1/4W		
⚠ R238			R92-0173-05	RC 2.2M M 1/2W	KP	
R250,251			RS14DB3A561J	FL-PROOF RS 560 J 1W		
R252,253			RD14AB2E100J	FL-PROOF RD 10 J 1/4W		
VR1			R12-3096-05	TRIMMING POT.(10K) AM		
VR2			R12-3097-05	TRIMMING POT.(22K) FM		
VR3			R12-1069-05	TRIMMING POT.(4.7K)VCO		
VR4		*	R12-6011-05	TRIMMING POT.(330K)SEPARATION	E	
VR4		*	R12-8015-05	TRIMMING POT.(1M) SEPARATION	KP	
S2 -32	2A,2B		S40-1064-05	PUSH SWITCH (OPERATION KEY)		
S33	1B	*	S42-2139-05	MULTIPLE PUSH SWITCH(SPEAKERS)		
S34	2C		S31-2094-05	SLIDE SWITCH (PRESET)		
D1			1SS133	DIODE		
D1			1SS176	DIODE		
D2			KV1236(Z2)	VARIABLE CAPACITANCE DIODE		
D3		*	HZS6.8N(B2)	ZENER DIODE		
D3		*	RD6.8ES(B2)	ZENER DIODE		

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D4 -6			1SS133	DIODE		
D4 -6			1SS176	DIODE		
D8			1SS133	DIODE	KP	
D8			1SS176	DIODE		
D8 -11			1SS133	DIODE	E	
D9			1SS176	DIODE	E	
D10			1SS133	DIODE	KP	
D10			1SS176	DIODE		
D11			1SS176	DIODE	E	
D24 -38			1SS133	DIODE		
D24 -38			1SS176	DIODE		
D39		*	HZS10N(B)	ZENER DIODE		
D39		*	RD10ES(B)	ZENER DIODE		
D40 -43			1SS133	DIODE		
D40 -43			1SS176	DIODE		
FL1		*	FIP9AM24	FLUORESCENT INDICATOR TUBE		
IC1			LA1265	IC(FM/AM TUNER)		
IC2			AN7470	IC(FM MPX)		
IC3			LM7001	IC(PLL FREQUENCY SYNTHESIZER)		
IC4		*	7516HG-031-36	IC(MICROPROCESSOR)		
IC6 -10			LB1294	IC(6CH DARLINGTON DRIVER)		
IC11			TD6301AP	IC(FL/LED/LCD FREQ DISPLAY DR)		
Q1			2SC1923(R,O)	TRANSISTOR		
Q2 -5			2SC945(A)(Q,P)	TRANSISTOR	KP	
Q2 -6			2SC945(A)(Q,P)	TRANSISTOR	E	
Q7			2SC2003(L,K)	TRANSISTOR		
Q8			2SA733(A)(Q,P)	TRANSISTOR		
Q9 ,10			2SC1845(F,E)	TRANSISTOR		
Q11 ,12			2SA733(A)(Q,P)	TRANSISTOR		
Q13 ,14			2SK163(K)	TRANSISTOR		
54	2C		W02-0699-05	FM FRONT-END ASSY	KP	
54	2C		W02-0700-05	FM FRONT-END ASSY	E	
AUDIO UNIT (X09-2310-11)						
C1 ,2			C91-0749-05	CERAMIC 220PF K		
C3 ,4			CE04KW1V100M	ELECTRO 10UF 35WV		
C5 ,6			CK45FB1H222K	CERAMIC 2200PF K	E	
C7 ,8			CE04KW1A101M	ELECTRO 100UF 10WV		
C9 ,10			CF92FV1H123J	MF 0.012UF J		
C11 ,12			CF92FV1H332J	MF 3300PF J		
C13 ,14			CE04KW1V4R7M	ELECTRO 4.7UF 35WV		
C15 -30			C91-0753-05	CERAMIC 470PF K		
C31 -34			CE04KW1V100M	ELECTRO 10UF 35WV		
C35 -40			CE04KW1HR47M	ELECTRO 0.47UF 50WV		
C41 ,42			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C43 ,44			CE04KW1HR47M	ELECTRO 0.47UF 50WV		
C45 ,46			C91-0751-05	CERAMIC 330PF K		
C47 ,48			CE04KW1V100M	ELECTRO 10UF 35WV		
C49			C91-0769-05	CERAMIC 0.01UF M		
C51			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C52			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C53 ,54			CK45FF1H223Z	CERAMIC 0.022UF Z		
C55			C91-0769-05	CERAMIC 0.01UF M		
C56			CE04KW1C470M	ELECTRO 47UF 16WV		
C57			CE04KW1C470M	ELECTRO 47UF 16WV		

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C58			CE04DW1C101M	ELECTRO 100UF 16WV		
C59 ,60			CE04KW1C220M	ELECTRO 22UF 16WV		
C61 ,62			CE04KW1H010M	ELECTRO 1. 0UF 50WV		
C63 ,64			C91-0749-05	CERAMIC 220PF K		
C65 -68			C91-0769-05	CERAMIC 0. 01UF M		
C69 ,70			CC45FSL1H010C	CERAMIC 1. 0PF C		
C71 ,72			CC45FSL1H220J	CERAMIC 22PF J		
C73 ,74			CC45FSL1H330J	CERAMIC 33PF J		
C75 ,76			CC45FSL1H221J	CERAMIC 220PF J		
C77 ,78			CK45FF1H103Z	CERAMIC 0. 010UF Z		
C79 -82			CF92FV1H104J	MF 0. 10UF J	E	
C81 ,82			CF92FV1H473J	MF 0. 047UF J	KP	
C83 ,84			CK45FF1H103Z	CERAMIC 0. 010UF Z		
C85		*	CE04KW1J100M	ELECTRO 10UF 63WV		
C86		*	CE04KW1J330M	ELECTRO 33UF 63WV		
C87			CE04KW1V100M	ELECTRO 10UF 35WV		
C88			CE04KW1C221M	ELECTRO 220UF 16WV		
C89			CE04KW1H2R2M	ELECTRO 2. 2UF 50WV		
C90			CE04KW1C101M	ELECTRO 100UF 16WV		
C91			CE04KW1H100M	ELECTRO 10UF 50WV		
C92			CE04KW1H101M	ELECTRO 100UF 50WV		
C93 ,94		*	C90-1315-05*	ALMINIUM ELECTROLYTIC C.		
C95 ,96			CK45FF1H103Z	CERAMIC 0. 010UF Z		
C97			CE04KW1V101M	ELECTRO 100UF 35WV		
C98			CE04KW1E332M	ELECTRO 3300UF 25WV		
C99 -103			CE04KW1C470M	ELECTRO 47UF 16WV		
C104,105			C91-0757-05	CERAMIC 0. 001UF K		
C106			CE04KW1V4R7M	ELECTRO 4. 7UF 35WV		
C107			CE04KW1H010M	ELECTRO 1. 0UF 50WV		
C108		*	CE04DW1V220M	ELECTRO 22UF 35WV		
C111,112			CK45FB1H561K	CERAMIC 560PF K		
C113,114			CE04KW1H2R2M	ELECTRO 2. 2UF 50WV		
C115,116			CE04KW1H0R1M	ELECTRO 0. 1UF 50WV		
C117,118			CE04KW1HR47M	ELECTRO 0. 47UF 50WV		
C119,120			CF92FV1H223J	MF 0. 022UF J		
C121,122			CF92FV1H154J	MF 0. 15UF J		
C123,124			CF92FV1H562J	MF 5600PF J		
C125,126			CF92FV1H473J	MF 0. 047UF J		
C127,128		*	CF92FV1H182J	MF 1800PF J		
C129			CF92FV1H153J	MF 0. 015UF J		
C130			CF92FV1H153J	MF 0. 015UF J		
C131,132			CK45FB1H561K	CERAMIC 560PF K		
C133			CE04KW1HR47M	ELECTRO 0. 47UF 50WV		
C134			CF92FV1H123J	MF 0. 012UF J		
C135			CF92FV1H332J	MF 3300PF J		
C136			CF92FV1H123J	MF 0. 012UF J		
C137			CF92FV1H332J	MF 3300PF J		
C138			CF92FV1H123J	MF 0. 012UF J		
C139			CF92FV1H332J	MF 3300PF J		
C140			CE04KW1V100M	ELECTRO 10UF 35WV		
C141,142			CF92FV1H333J	MF 0. 033UF J		
C143			CE04KW1V100M	ELECTRO 10UF 35WV		
C151			CE04KW1V100M	ELECTRO 10UF 35WV		
C152			CE04JW1C100M	ELECTRO 10UF 16WV		
C153			CE04KW1V100M	ELECTRO 10UF 35WV		

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C154-156			CE04DW0J471M	ELECTRO 470UF 6.3WV		
C157,158			CE04KW1A470M	ELECTRO 47UF 10WV		
45	1C		E23-0125-05	TERMINAL		
E1	1C		E13-0229-05	PHONO JACK (2P)PHONO		
E2 ,3	1C		E13-0814-05	PHONO JACK (8P)TAPE,VIDEO		
E4	1C		E13-0497-05	PHONO JACK (4P)VIDEO		
E8 -10	1C		E13-0227-05	PHONO JACK (2P)VIDEO MNTR OUT		
⚠ F3	1C		F05-1623-05	FUSE (SEMKO) (250V T1.6A)	E	
⚠ F3	1C		F06-1521-05	FUSE (UL) (250V 1.5A)	KP	
49	1C		J13-0041-05	FUSE CLIP (ø6)	KP	
49	1C		J13-0054-05	FUSE CLIP (ø5)	E	
J	1B		N09-0333-05	TAPPING SCREW (ø3X12)		
CP1 ,2			R90-0187-05	MULTI-COMP 0.22X2 K 5W		
R131-136			RD14AB2E221J	FL-PROOF RD 220 J 1/4W		
R143-146			RD14AB2E221J	FL-PROOF RD 220 J 1/4W		
R147-150			RD14AB2E2R2J	FL-PROOF RD 2.2 J 1/4W		
R151			RD14AB2E100J	FL-PROOF RD 10 J 1/4W		
R152			RD14AB2E470J	FL-PROOF RD 47 J 1/4W		
R153,154			RS14KB3D4R7J	FL-PROOF RS 4.7 J 2W		
R169			RD14AB2E4R7J	FL-PROOF RD 4.7 J 1/4W		
R175			RD14AB2E270J	FL-PROOF RD 27 J 1/4W		
R183,184		⁎	RS14DB3A471J	FL-PROOF RS 470 J 1W		
R187			RD14AB2E101J	FL-PROOF RD 100 J 1/4W		
R194			RD14AB2E101J	FL-PROOF RD 100 J 1/4W		
VR1 ,2			R12-1066-05	TRIMMING POT.(1K) IDLE CURRENT		
S1	2C	⁎	S42-2140-05	MULTIPLE PUSH SWITCH(FM,SYNTHE		
D1 -32			1SS133	DIODE		
D1 -32			1SS176	DIODE		
D37 ,38			1SS133	DIODE		
D37 ,38			1SS176	DIODE		
D39 -42			1SS131	DIODE		
D39 -42			1SS178	DIODE		
D43			DSM1A1	DIODE		
D44 ,45			1SS133	DIODE		
D44 ,45			1SS176	DIODE		
D46 -49		⁎	DSA3A2	SURGE ABSORBER		
D50 ,51			DSM1A1	DIODE		
D52		⁎	RD33ES(B2)	ZENER DIODE		
D53		⁎	HZS8.2N(B2)	ZENER DIODE		
D53		⁎	RD8.2ES(B2)	ZENER DIODE		
D54 -57			DSM1A1	DIODE		
D58		⁎	HZS13N(B2)	ZENER DIODE		
D58		⁎	RD13ES(B2)	ZENER DIODE		
D59			1SS131	DIODE		
D59			1SS178	DIODE		
D60			1SS133	DIODE		
D60			1SS176	DIODE		
D61			HZS6.2N(B2)	ZENER DIODE		
D61			RD6.2ES(B2)	ZENER DIODE		
D69 ,70			1SS133	DIODE		
D69 ,70			1SS176	DIODE		

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PARTS LIST

* New Parts
Parts without **Parts No.** are not supplied.
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Telle ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
D71		*	HZS8.2N(B2)	ZENER DIODE		
D71		*	RD8.2ES(B2)	ZENER DIODE		
D72			HZS6.2N(B2)	ZENER DIODE		
D72			RD6.2ES(B2)	ZENER DIODE		
D79 -86			1SS133	DIODE		
D79 -86			1SS176	DIODE		
D87			HZS6.2N(B2)	ZENER DIODE		
D87			RD6.2ES(B2)	ZENER DIODE		
D88		*	HZS3.3N(B)	ZENER DIODE		
D88		*	RD3.3ES(B)	ZENER DIODE		
D89 ,90			1SS133	DIODE		
D91			1SS133	DIODE		
D91			1SS176	DIODE		
IC1			AN6556F	IC(OP AMP X2)		
IC1		*	M5218P-A	IC(OP AMP X2)		
IC2			TC9164N	IC(16CH BILATERAL SELECTOR SW)		
IC3		*	TC9163N	IC(BILATERAL SWITCH X16)		
IC4			TC9176P	IC(2CH ELECTRONIC VOLUME)		
IC5			AN6556F	IC(OP AMP X2)		
IC5		*	M5218P-A	IC(OP AMP X2)		
IC7 ,8			M5227P	IC(5CH GRAPHIC EQULIZER)		
IC9 ,10			AN6556F	IC(OP AMP X2)		
IC9 ,10		*	M5218P-A	IC(OP AMP X2)		
IC11,12			UPD4066BC	IC(BILATERAL SWITCH X4)		
Q1 -4			2SC1845(F,E)	TRANSISTOR		
Q5 ,6			2SC2878	TRANSISTOR		
Q7 ,8			2SC945(A)(Q,P)	TRANSISTOR		
Q9			2SA733(A)(Q,P)	TRANSISTOR		
Q9			2SA999(E,F)	TRANSISTOR		
Q10			2SC2320(E,F)	TRANSISTOR		
Q10			2SC945(A)(Q,P)	TRANSISTOR		
Q11 -14			2SA992(F,E)	TRANSISTOR		
Q15 -18			2SC1845(F,E)	TRANSISTOR		
Q19 ,20			2SA992(F,E)	TRANSISTOR		
Q21 ,22			2SC3419(Y)	TRANSISTOR		
Q23 ,24			2SC2590(Q,R)	TRANSISTOR		
Q25 ,26			2SA1110(Q,R)	TRANSISTOR		
Q27 ,28		*	2SC3854*5(O,P)	TRANSISTOR		
Q29 ,30		*	2SA1490*5(O,P)	TRANSISTOR		
Q31 ,32			2SC1845(F,E)	TRANSISTOR		
Q33			2SA992(F,E)	TRANSISTOR		
Q34 ,35			2SC2320(E,F)	TRANSISTOR		
Q34 ,35			2SC945(A)(Q,P)	TRANSISTOR		
Q36			2SC2878	TRANSISTOR		
Q37			2SB772(Q,P)	TRANSISTOR		
Q38			2SC2167	TRANSISTOR		
Q39 ,40			2SC2320(E,F)	TRANSISTOR		
Q39 ,40			2SC945(A)(Q,P)	TRANSISTOR		
Q41 ,42			2SA733(A)(Q,P)	TRANSISTOR		
Q41 ,42			2SA999(E,F)	TRANSISTOR		
Q43 ,44			2SC2167	TRANSISTOR		
Q45			2SA733(A)(Q,P)	TRANSISTOR		
Q45			2SA999(E,F)	TRANSISTOR		
Q46			2SC2003(L,K)	TRANSISTOR		
Q47			2SA733(A)(Q,P)	TRANSISTOR		

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Q47			2SA999(E,F)	TRANSISTOR		
Q51 -56			2SC2320(E,F)	TRANSISTOR		
Q51 -56			2SC945(A)(Q,P)	TRANSISTOR		
Q60 ,61			2SA733(A)(Q,P)	TRANSISTOR		
Q60 ,61			2SA999(E,F)	TRANSISTOR		
Q62			2SC2003(L,K)	TRANSISTOR		
Q63 -65			2SA999(E,F)	TRANSISTOR		
Q66 ,67			2SC2320(E,F)	TRANSISTOR		
Q66 ,67			2SC945(A)(Q,P)	TRANSISTOR		
SUB-CIRCUIT UNIT (X13-5540-11)						
D1 ,2			1SS131	DIODE		
D1 ,2			1SS178	DIODE		
Q1 ,2			2SC945(A)(Q,P)			
FM FRONT END UNIT (W02-0699-05)						
D1 -3			1SV110	VARICAP		
TR1			2SK439	FET		
TR2 ,3			2SC3391	TRANSISTOR		
TR4			2SC3494	TRANSISTOR		
FM FRONT END UNIT (W02-0700-05)						
D1 -4			1SV110	VARICAP		
TR1			3SK85	FET		
TR2 ,3			2SC3391	TRANSISTOR		
TR2 ,3			2SC535	TRANSISTOR		
TR4			2SC2839	TRANSISTOR		
TR5			2SK241	FET		
TR5			2SK439	FET		

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KR-V45

SPECIFICATIONS

(IHF'66)

AUDIO SECTION

Power Output

55 watts per channel minimum RMS, both channel driven at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.03 % total harmonic distortion

58 watts per channel minimum RMS, both channel driven at 8 ohms at 1 kHz with no more than 0.03 % total harmonic distortion

Total Harmonic Distortion	
(20 Hz-20,000 Hz, 8 ohms)	0.03 % at 55 watts
(1 kHz, 8 ohms)	0.007 % at 55 watts
Inter modulation Distortion	0.03 % at 55 watts
Input Sensitivity/Impedance	
PHONO (MM)	2.5 mV/47 kohms
CD/AUX, TAPE, VIDEO	150 mV/47 ohms
Frequency Response	
PHONO (RIAA standard Curve)	20 Hz-20,000 Hz...±0.5 dB
TAPE, CD/AUX	10 Hz-60,000 Hz...+0 dB, −3 dB
Signal to Noise Ratio	
PHONO (MM)	73 dB
CD/AUX, TAPE	100 dB
VIDEO	90 dB
Graphic Equalizer	
Center Frequency	63 Hz, 300 Hz, 1 kHz, 3 kHz, 10 kHz
Control Range	±12 dB

VIDEO SECTION

Inputs	**VIDEO 1,2,3**	1 Vp-p, 75 ohms unbalanced
Output	**VIDEO 1,2**	1 Vp-p, 75 ohms unbalanced
	MONITOR VIDEO OUT	1 Vp-p, 75 ohms unbalanced

FM TUNER SECTION

Tuning Frequency Range	87.5 MHz-108 MHz
Antenna Impedance	300 ohms balanced & 75 ohms unbalanced
Usable Sensitivity	10.8 dBf (1.9 μV)
50 dB Quieting Sensitivity	
MONO	14.2 dBf (2.8 μV)
STEREO	37.1 dBf (39 μV)
Signal to Noise Ratio at 65 dBf	
MONO	78 dB
STEREO	72 dB
Total Harmonic Distortion at 1,000 Hz	
MONO	0.09 %
STEREO	0.12 %
Frequency Response	30 Hz-15,000 Hz +0.5 dB, −2 dB
Stereo Separation	45 dB at 1,000 Hz
Selectivity	55 dB at 400 kHz
Capture Ratio	1.2 dB
Image Rejection Ratio	43 dB
IF Rejection Ratio	86 dB
Spurious Rejection Ratio	84 dB
AM Suppression Ratio	65 dB

AM TUNER SECTION

Tuning Range	
530 kHz-1,610 kHz	
Usable Sensitivity	10 μV (400 μV/m)
Signal to Noise Ratio	50 dB
Total Harmonic Distortion	0.3 %
Selectivity	25 dB

GENERAL

Power Requirement	60 Hz, 120 V...USA & CANADA Model
Power Consumption	2.2 A...USA & Canada
AC Outlet	Switched × 3 (200 W)
Dimensions	420(W)×111(H)×319.5(D)mm (16-9/16×4-3/8"×12-9/16")
Weight (Net)	KR-V45...6.7 kg (14.8 lb)